

**CURRICULUM, CONTEXT AND IDENTITY -
AN INVESTIGATION OF THE CURRICULUM PRACTICES OF
GRADE 9 TEACHERS IN THREE CONTRASTING SOCIO-
ECONOMIC SCHOOL CONTEXTS**

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**SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF DOCTOR OF
PHILOSOPHY IN THE FACULTY OF EDUCATION**

**UNIVERSITY OF KWAZULU-NATAL
PIETERMARITZBURG**

MARCH 2006

DECLARATION

I hereby declare that this dissertation, unless specifically indicated to the contrary, is my own original work. It has not been submitted for a degree at any other institution.

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MARCH 2006

ACKNOWLEDGEMENTS

I am deeply indebted to Professor Ken Harley for his supervision of this work. Thank you for your guidance and support throughout the study.

I am deeply indebted to the Spencer Foundation grant that made the privilege of full time study possible. To Professors Linda Chisholm, Michael Cross, Crain Soudien and Martin Carnoy, thank you for this wonderful opportunity.

I am deeply indebted to other Spencer Fellows – it was very reassuring to have you on the same journey.

I pay tribute to the three schools and the teachers who participated in the study. For ethical reasons I cannot mention your names, but without your sincere participation and generosity this study would not have been possible. Thank you for allowing me so graciously into your classrooms and for bearing being observed by a stranger.

I thank the leadership and staff of the University of KwaZulu-Natal, School of Education on the Pietermaritzburg campus for the support given during the duration of the study. The resources made available to me were much appreciated.

ABSTRACT

This study investigates variations in actual curricular practices across three diverse socio-economic status (SES) urban schools in the province of KwaZulu-Natal, at the end of the first decade of democracy. The aim of the study was to derive a theoretically informed understanding of the contribution of curriculum practices to social stratification. An eclectic theoretical approach, with an emphasis on Bernsteinian structural interactionist approach involving the micro situation reflecting macro level power relations, informed the study. A qualitative research design was used. The findings of the study showed that there were significant variations in the internal structuring of pedagogic discourse across the three contrasting socio-economic school contexts. Deep-seated inequalities in access to diverse forms of knowledge and to intellectual enhancement of students were being reproduced across the three schools.

The students in the elite, independent SES school, and top stream of the middle SES school, were being inducted into a variety of strongly classified and framed distinct disciplinary-based subjects and weakly classified and framed integrated projects and had far better chances of entry to fields of study in higher education than students at the lower socio-economic status school. Utilitarian ideology, simple everyday and community knowledge discourses, and incoherent pedagogy dominated classroom practices at the lower SES school. The consequence was that students were being positioned in segmental horizontal discourses. At the elite and lower SES schools the variations in knowledge and intellectual skills taught are attributed to teachers' differential grasp of subject content arising from their own stratified educational experiences and to the persisting extreme inequalities in distribution of resources. This situation indicates continuities with apartheid-structured inequalities. The assimilationist approach followed by the middle SES school, a former White school that had become racially and socio-economically diverse, was clearly being challenged by many students, with adverse student outcomes.

The different curriculum practices across the three schools have implications for the reproduction of social stratification. The study suggests that South Africa's historical

legacy context is an extremely powerful force in influencing and constraining actual outcomes in South African schools. The lack of attention to contextual realities by the 'one size fits all' policy functions to undermine transformative impulses. The non-interventionist policy of the post-Apartheid government with reference to school development and improvement, namely the policy of decentralisation and the devolution of power and governance to local schools, benefited the advantaged schools that possess the necessary economic and social capital to compete and exercise choice and manipulate the system to their advantage. For the disadvantaged school that lacked the material and intellectual resources the policy became the means for the entrenching of inequalities in access to diverse forms of knowledge and thus to the reproduction of social inequalities.

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ACRONYMS

AC	Arts and Culture
ACs	Assessment Criteria
C2005	Curriculum 2005
CASE	Cognitive Acceleration through Scientific Education
COs	Critical outcomes
DoE	Department of Education
EMS	Economic and Management Sciences
ex-DET	Ex Department of Education and Training
HODs	Heads of Department
HSS	Human and Social Sciences
IEB	Independent Examinations Board
ISASA	Independent Schools Association of South Africa
KZN	KwaZulu-Natal
LLC	Language, Literacy and Communication
LO	Life Orientation
LSMs	Learner Support Materials
MLMMS	Mathematical Literacy, Mathematics and Mathematical Sciences
NCS	National Curriculum Statement
NNSSF	National Norms and Standards for School Funding
NS	Natural Sciences
PEI	President's Education Initiative
RNCS	Revised National Curriculum Statement
SAQA	South African Qualifications Authority
SASA	South African Schools Act
SES	Socio-economic status
SOs	Specific outcomes

CHAPTER 1

INTRODUCING THE STUDY

1.1 Introduction

In Apartheid South Africa, each individual was designated as belonging to one of four racial groups: 'White', 'African', 'Indian' (whose ancestors came from the Indian sub-continent) and 'Coloured'. These terms are still used to monitor progress towards equity and have been used in this dissertation.

Apartheid, an egregious form of racism, deliberately structured the education system along deep lines of race and class inequality. The Bantu Education Act of 1953 provided the means for developing a racially and economically stratified education system. Bantu Education, an inferior education for Africans, aimed to 'educate' African people for the economy's demand for unskilled labour. White people were educated for professional and managerial occupations. Resources were very unequally distributed with six times more spent per White child than per African child. By the 1970s, teachers were trained in racially separate colleges and universities (Sayed, 2004). Each type of college and university trained teachers of different races for schools of different races. The quality of teacher education for Africans was deliberately inferior to that for Whites. Enslin (1988:67) argued that the majority of teachers in South Africa, and the vast majority of Black teachers, continue to be 'products' of Bantu Education (*idem*:67). The curriculum, training of teachers and their posting to racially segregated schools was instrumental in perpetuating race and class stratification.

As Apartheid began to unravel in the late 1980s and the early 1990s the Apartheid government:

Anticipating a shift of political power from white to black hands, transferred ownership of the physical property of the former all-white schools to the parents in these schools and granted them significant authority to run their own affairs, including the right to augment public revenues by charging fees to parents. (Fiske and Ladd, 2004:63.)

Thus the democratic government inherited a very unequal education system rooted in apartheid.

South Africa celebrated 10 years of democratic government in 2004. The first decade of democratic rule in South Africa was characterised by major social and political changes including curriculum reform and restructuring. The new constitution (1996) based on five values: human rights, democracy, anti-racism, anti-sexism and redress, provided the basis for curriculum transformation and development. It establishes basic education, and equal access to educational institutions as the right of all citizens.

In the policy arena the new government has made much progress in establishing a number of key policy instruments such as the South African Schools Act (SASA, 1996), the National Norms and Standards for School Funding (NNSSF, 1998), the Norms and Standards for Educators (1998) and a number of curriculum policy documents for different phases that set the stage for curriculum transformation and development. Jansen (2004) notes the 'impressive architecture' of policies for 'democratic education' that has been formulated.

The new democratic government did not roll back local control of schools initiated by the Apartheid government in the early 1990s. By adopting the principle of 'self-management' school development and improvement have been made each school's responsibility. Under self-management schools are the primary unit of improvement and development. The principles of self-management are contained in Section 20 and 21 of the South African Schools Act (SASA) of 1996. The aim of self-management is to shift important powers and functions from central departments and devolve these powers to local schools. The task of managing local schools is vested in each school's elected school governing body structured to be dominated by parents (SASA, 1996). Governing body

functions include the setting of admissions policy, making recommendations to the provincial Department of Education (DoE) regarding the appointment of staff and to charge school fees.

The South African Schools Act makes provision for two types of schools – independent and public schools. Public schools that are less disadvantaged in terms of material resources have been allocated Section 21 status. In addition to the governing body functions outlined above, Section 21 schools also manage the public funds allocated to the school, for example ‘to purchase textbooks, educational materials or equipment for the school’ and ‘to pay for services to the school’ (SASA, 1996). These policies absolve the government from blame for problems and failures at schools. To a large extent, school managers, educators, parents and students are responsible for educational and organisational matters in their schools.

With the National Norms and Standards for School Funding (NNSSF, 1998) government-funded secondary schools received equal subsidy from the government in the form of one teacher per thirty-five pupils, one clerk per school, some textbooks and a limited sum for other expenditure. For Apartheid advantaged schools this represented a large cutback. To maintain their previous advantaged status, schools were empowered to charge school fees. Thus, the governing body of a public school is mandated to ‘take all reasonable measures within its means to supplement the resources supplied by the state in order to improve the quality of education provided by the schools’ (SASA, 1996:21). The policy provided for exemption from paying fees by parents with lower incomes than the threshold set. The funds collected from school fees can be used for hiring additional teachers, referred to as governing body teachers.

The close relationship between national political visions and national curricula has been highlighted by many writers of differing theoretical orientations. Harley and Wedekind (2004) argue that ‘nowhere is this relationship illustrated more starkly than in the case of South Africa’ and that the ‘strikingly close alignment of curriculum policy to political vision is evident through periods of political change characterized by dramatically

different political visions' (2004:195). Immediately after the 1994 elections the existing curriculum was purged of racially offensive, sexist and outdated content (Chisholm, 2005). This process resulted in the Interim Syllabus that was to be used by all education departments while new curriculum policy was being developed.

In 1997 the new national Department of Education (DoE) launched Curriculum 2005 (C2005) as the foundation of the post-apartheid schools' curriculum. C2005, informed by the principles of transformational outcomes-based education introduced a revolutionary approach to teaching and learning (Taylor & Vinjevold, 1999) for the General Education and Training band that covered Grade 1 to Grade 9. Three years later, in 2000, C2005 was reviewed and revised (Chisholm, 2000; DoE, 2001a). The streamlined C2005, the Revised National Curriculum Statement (DoE, 2002a) became official policy in 2002 and was implemented in 2004 (Chisholm, 2005).

Curriculum 2005 was conceived and formulated as an overt instrument of social and political transformation. 'The base values of non-racism, non-sexism and redress are visibly dispersed in any major government policy on education' (Jansen, 2004:126). C2005, based on the constitutional goals of democratisation, equity and social justice, advocates a radical change to what is considered 'worthwhile' school knowledge and to pedagogy. It advocates a high knowledge, high skills curriculum as the means to promoting social justice, equity and development. A priority in new curriculum policy was equity:

In view of the country's history and legacy of inequality, it is important that the state's resources be deployed according to the principle of equity, so that they are used to provide essentially the same quality of learning opportunities for all citizens. (Department of Education, 1997:v.)

This is seen as an inescapable duty of government (NDOE, 1997:21).

The learning goals set in C2005 make it clear that students must learn more than academic knowledge, skills, values and attitudes – knowledge must contribute to

developing a democratic society. The seven critical cross-field outcomes that underpin all curricula require learners to go beyond recall, recognition and reproduction of information and to critically evaluate, analyse, synthesize, produce and apply knowledge. Five developmental outcomes that should 'contribute to full personal development ...and social and economic development at large' have also been set (DoE, 1997:15). These twelve major outcomes can be seen on the website of the South African Qualifications Authority www.saqqa.org.za.

In terms of organisation of knowledge C2005 overturned the widespread traditional reliance on discipline-based subjects for the school curriculum and advocated a radical form of integrated knowledge. Other design features of C2005 included learner-centred education and outcomes-based education. While all three of the design features had potential to contribute to the attainment of equity, integrated knowledge was a key principle in this regard. Thus:

South Africa has embarked on transformational Outcomes Based Education. This involves the most radical form of an integrated curriculum. There are several different forms of integration. This most radical form implies that not only are we integrating across disciplines into Learning Areas but we are integrating across all eight Learning Areas in all Educational activities... The outcome of this form of integration will be a profound transferability of knowledge in real life. (Department of Education, 1997:32.)

Three levels of knowledge integration were advanced in the new curriculum.

- Firstly, traditional school subjects have been replaced by eight integrated Learning Areas. For example, History and Geography were 'merged' into Human and Social Science; and Biology, Physical Geography and General Science were 'merged' into Natural Science.
- Secondly, it set out an integration across eight Learning Areas. Each Learning Area was to be studied under five themes or 'phase organizers' prescribed by policy that are: personal development and empowerment; culture and society (including citizenship); communication; environment; and, economy and development.

- Thirdly, a desired outcome of this form of radical integration, to be promoted by suitable learning activities, was ‘a profound transferability of knowledge to real life’.

C2005 legitimises diverse forms of knowledge for the school curriculum. In a detailed analysis of the Mathematical Literacy, Mathematics & Mathematical Science Learning Area, Graven (2000) identified four different orientations: mathematics for critical democratic citizenship, mathematics for its intrinsic justification, mathematics for future mathematics education and mathematics for everyday utilitarian purposes. Similar orientations are present in the other learning areas. This is expanded on in Chapter 5.

Many empirical studies highlight the gap between the official or intended curriculum and the actual curriculum practice in schools and classrooms. Jansen & Sayed (2001) argue that in spite of the dazzle of post-apartheid education policies there is considerable distance between policy (official statements of intent) and practice (experiences of teachers and learners in educational institutions) and that little has changed on the ground. Torres (2004:168) argues that ‘there will always be a gap between the publicly stated goals and targets of state policies and the actual outcomes’. Benavot & Resh (2003) argue that more often than not ‘slippages’ or discontinuities are apparent, that some schools may choose not to teach required subjects, may offer non-official subjects, may choose to alter the instructional time across subjects or reorganize the syllabi and contents of school subjects on the basis of perceived students’ abilities and limitations. One of the aims of this research project is to illuminate in a theoretically informed manner the variations in the gap between curriculum policy and practices in contrasting socio-economic school contexts.

Kahn (2000) argues that contextual factors must be central to research since what works in some schools might not work in others. Eisner (2000) writing about American education argues that ‘the school as an institution is more likely to change the incoming message than the message the institution’ and that ‘incoming messages to the school regarding matters of curriculum and teaching are changed in subtle but significant ways by all of the players involved’ (*idem*:349). With reference to educational leaders, Eisner

holds that they have not taken seriously the contextual conditions that need to be addressed, and ‘the level of support that needs to be provided for schools to be altered in ways that genuinely reflect the highest educational ambitions for all children’ (Eisner, 2000:349). Holt (1996) similarly argues that ‘current bureaucratic reform proposals overlook the need to address the way curriculum experience is contextualised and shaped in the individual school’ (*idem*:241).

Much has been written about the teaching and learning practices in historically disadvantaged schools. From the perspective of empirical research of C2005 the findings of two large-scale research programmes highlight the marked decline in teaching and learning of basic numeric and literacy skills in disadvantaged schools.

The President’s Education Initiative (PEI) commissioned research of 35 schools concluded that books were in little evidence, reading was rare, writing was infrequent, and, when practised by students, hardly ever progressed beyond single words or short phrases (Taylor and Vinjevoold, 1999). The PEI research projects converge on a number of characteristics of classroom life in South Africa. Taylor and Vinjevoold (1999) analysed an excerpt from the Language Literacy and Communication Learning Area and point out the ‘overwhelming predominance of everyday knowledge, that sweeps across a bewildering mix of concepts’ and conclude that the Learning Programme ‘seems to be designed to encourage the most superficial approach to hundreds of activities... few if any of which are likely to result in solid conceptual development’ (Taylor and Vinjevoold, 1999:121). The most unequivocal finding about teachers is that of a poor grasp of the fundamental concepts in knowledge areas they are responsible for, which is a major problem in disadvantaged classrooms. Other features include learning topics being dealt with at low levels of conceptual knowledge, tasks are set at low levels of challenge involving recall of simple information, books are in little evidence, children hardly ever read or write and when they do it is in the form of single words and phrases (Taylor and Vinjevoold, 1999).

The Review Committee (Chisholm: 2000) tasked to review Curriculum 2005 concluded on the basis of previous recent classroom-based research that literacy and numeric skills were not being systematically developed in South African primary schools. Teachers submitted their objections to integration of subjects, for example, 'submissions from both Geography and History subject groups claim that the HSS of C2005 compromises the capacity for learning in these areas'. Concerns were raised that a fusion might 'lead only to superficial observations about 'social problems' or 'environmental issues' (*idem*:40).

The findings of these large-scale research projects, in terms of both teachers' poor grasp of knowledge areas and lack of quality and rigour in students' learning activity, reflect the situation in disadvantaged schools. The 35 schools sampled for the President's Education Initiative (PEI) research (Taylor and Vinjevold, 1999) were drawn from 'disadvantaged' schools. The PEI researchers disclose that they 'chose their teachers, schools and pupils so as to approximate as closely as possible typical conditions in township and farm schools' (*idem*: 159). These results do not reflect the situation in elite independent and public middle class schools in the country with reference to both teachers' grasp of knowledge areas and pupils' learning activities. The exponential increase in the number of independent schools in South Africa (Hofmeyr & Lee, 2002) from 518 in 1994 to at least 1494 in 2001 indicates their growing significance. Similarly the advantaged former White government schools, that have been able to charge higher school fees and employ large numbers of governing body or school paid teachers to offset state restructuring and rationalisation have not been researched by the large-scale research projects just mentioned.

The research studies described do not give an account of the differential effects of policy on practice in upper middle class and middle class schools. Cuban (1997) reported the differential effects of policy on top, middle and bottom tier schools in America. In the top tier serving the affluent, mainly white communities schools scored well on indicators of quality, although policy had little influence on organization, governance, curriculum and pedagogy. The middle tier had acceptable scores on quality, embraced reforms and successfully implemented them in organization, governance and curriculum although

pedagogical practices remained the same. In the bottom tier serving mainly minority and poor children, reforms had had little effect.

Given that equity is a key goal designed to address the profound and gross inequalities of South African schools, a surprising gap in the literature is the absence of comparative studies on the implementation of C2005 in different socio-economic school contexts. Not much has been written about curricula practices in elite independent and middle socio-economic school contexts.

Symbolic interactionist theory postulates the conditioning effect of context on teachers' practice. Given the profound inequalities of South African schools where, for example, 52% of schools are inadequately supplied with textbooks and where 83% of schools do not have libraries (Harley and Wedekind, 2004) research of curriculum practices in a range of contrasting socio-economic contexts to analyse gains in equity is pertinent. The critical effect of school context has barely been acknowledged in policy, and it has only been alluded to in some reports (Hlalele, 2000; Kahn and Volmink, 1999; Kruss, 1999; Naicker, 1999).

Other reports indicate that C2005 implementation will be most difficult in historically disadvantaged schools due to: lack of resources and space (Abrahams, 1997; Brodie, 2000; Oakes, 2001; Reeves, 1999); and, inadequate subject knowledge of teachers (Graven, 2002). Other studies suggest that the gap between the historically advantaged and disadvantaged schools is widening (Christie, 1999). This implies a need for research in a wide range of contexts in South Africa.

In terms of understanding the reproduction of inequalities, Bernstein (1996:18) theorises that 'it is the structure of pedagogic discourse itself that provides the means whereby external power relations are relayed'. Based on Bernstein's view, one could hypothesise that the internal structure of pedagogic discourse of contrasting socio-economic schools would be different. If it is the internal structure of the discourse that is a carrier for power

relations, then it is of interest from a sociological and policy point of view. Bernstein zooms in on the impact of pedagogic communication and control in the classroom that reproduce macro power relations.

The main question underpinning the study is: do different socio-economic school contexts value the diverse forms of knowledge legitimised by official curriculum policy in the interest of social transformation and equity? Thus the aim of the study is to illuminate in detail the variations in the forms of knowledge taught across the three schools.

This study focuses on the curriculum practices of teachers with an emphasis on inequalities in access to diverse forms of knowledge, both subject-based and integrated, valued in three contrasting socio-economic status schools. Within this broad focus I have emphasised integrated knowledge, since it is a key principle underpinning C2005. As a conceptual framework I drew on Bernstein's sociological theory that integrated knowledge is motivated by a redistribution of power and is achieved through three message systems: curriculum or knowledge, pedagogy and assessment. Bernstein juxtaposes the integrated code with the collection code or the traditional subject-based curriculum. Bernstein's theory of two types of educational codes – the collection and integrated codes – provided the conceptual framework for the description and analysis of diverging curricular practices within and across the three schools. This theory was useful for analysing curriculum practices for various reasons. Firstly, the study is contextualised within the context of national curriculum change from the collection to the integrated code. Secondly, the interactionist perspective enables micro-level practices to be explained by macro-level social structures. (Interactionist is defined by Meighan and Siraj-Blatchford (2003: 14) as looking at both – the patterns of society and the work and negotiations that individuals accomplish). Thirdly, integration of knowledge is viewed as an extension and development of a subject-orientated curriculum. Fourthly, according to the Bernsteinian conceptualisation of integration of knowledge as an integrated code, integration of knowledge results in a less rigid social structure in the school that arises from both the structuring of educational knowledge and the organisation of social

relationships. Thus an integrated knowledge code implies changes in the three message systems of the school – curriculum, defined as what is counted as valid knowledge; in pedagogy; and in assessment. The aspects analysed are: the forms, structure and status of knowledge taught; the pedagogic strategies used by teachers; and the knowledge valued for assessment. These aspects are explained in detail in Chapter 2.

1.2 Rationale And Motivation

Given the key importance of equal educational opportunities for the achievement of equity in post-apartheid South Africa, and the dearth of comparative studies, the present study is an attempt to provide detailed, exploratory comparative insights of variations of actual curriculum practices in three different socio-economic school contexts.

Following the introduction of C2005, classroom research in disadvantaged primary schools has shown that it is no easy task for teachers to advance learners' conceptual development within the C2005 'learning areas' (Taylor and Vinjevoid, 1999; Harley *et al.*, 2001). The C2005 Review Committee reported similar findings. Besides the emphasis on disadvantaged schools and teachers, what forms of knowledge do highly qualified and dedicated teachers in advantaged schools teach? It would be safe to assume that teachers' difficulties with respect to the new organization of knowledge would be no less in the secondary schools than in the primary schools. Given the long tradition of subject-based teaching in the secondary school, and the enduring importance of the Matric exam, the organisation of knowledge is an even more critical factor in the secondary school.

At the beginning of 2002, C2005 was extended to Grade 9 in the secondary schools. As yet, there is no known research into the way in which secondary school teachers in contrasting socio-economic school contexts have managed the new learning areas. There is thus the need for a fine-grained study into the curriculum practices of Grade 9 teachers. Grade 9 would be an appropriate focus because at this level neither the learners nor the school would be coping with the new learning areas for the first time. Grade 9 also

serves as a gateway to the Matriculation examination, a crucial determinant of life chances in the schooling system.

1.3 The Research Questions

Do the actual school and curriculum practices of Grade 9 teachers in three contrasting socio-economic schools transform or reproduce social inequalities?

Five sub-questions framed the data collection:

- What subjects and areas of study were offered?
- What forms of knowledge were teachers teaching?
- What competences were teachers developing?
- What pedagogic modes were teachers using?
- What were the perspectives of the teachers on their practices and on the official curriculum?
- How were curriculum practices related to teacher identities?

The four aims of the research project are: firstly, to analyse the official curriculum; secondly, to analyse the actual curriculum of each school as case studies; thirdly to compare the actual curriculum with the official curriculum; and fourthly to compare the actual curriculum across the three schools.

1.4 Structure Of The Thesis

The thesis is made up of ten chapters that are divided into several sections and subsections. The following is a brief description of what each chapter is about.

Chapter 1 introduces the study, giving a brief background of the political, theoretical, and

empirical context within which the research project is situated. The rationale for the study is also discussed. The research problem is formulated and the research questions are stated. It concludes with a signposting of the chapters that follow.

Chapter 2 presents a theoretical framework informing the study. The study is contextualised within the field of stratification of knowledge. In line with the views of Schwab (1969) and Morrison (2004) I adopted an eclectic theoretical approach in analysing both the intended and actual curriculum. I worked with multiple theoretical resources because each informed different aspects of the topic. Bernstein's conceptualisation of educational codes and integrated knowledge as an integrated code characterized by weaker classification and framing or weaker power and control relations, explained in detail in Chapter 2, provided the overarching theoretical lens informing the study. The forms of knowledge that are distinguished on the basis of structure and epistemology are also explained in Chapter 2.

Chapter 3 focuses on the clarification, analysis and operationalisation of the key concepts used in the study. I take an eclectic theoretical approach in analysing both the intended and actual curriculum. The concepts of educational code (Bernstein, 1971), diversity of knowledges (Bernstein, 2000), ideological traditions in the history of the school subject (Goodson, 1987), and philosophies of knowledge (Ernest, 1999; Peters, 1971) are used to frame the analysis.

Chapter 4 outlines the methodology and methods used in the study. Cohen, *et al.* (2001) distinguish between methodology and methods. The first section on methodology is a description and analysis of the philosophy underpinning the methods used, of their limitations and resources, and of clarifying their presuppositions and consequences. In a nutshell the aim of the methodology section is to present and defend the methodological approach chosen to research the curriculum. The second section on method refers to the range of approaches and techniques used to gather data to be the basis for description, inference, interpretation, explanation and generalisation.

In terms of methodology this is mainly a qualitative study using aspects of interpretive and critical theoretical approaches to educational research. From the interpretive paradigm, symbolic interactionism and aspects of depth hermeneutics are used. These are supplemented with ideology critique from critical theory. In terms of methods the case study approach to educational research has been used. Three diverse socio-economic status schools were purposively selected for in-depth study. A key method was non-participant observation of teachers' classroom practices followed by semi-structured interviews. An open-ended questionnaire was used to obtain professional, biographical details. Background information of students' residential areas and parents' occupations was obtained from school records and from students themselves.

In Chapter 5 an analysis of curriculum 2005 policy for the senior phase of the General Education and Training Band is undertaken. The aim in this section is to outline what the official curriculum policy, Curriculum 2005 (C2005) for the senior phase (NDOE, 1997) advocated in terms of curriculum, pedagogy and assessment. Radical changes are advocated by the official curriculum in each of these facets that together amount to a paradigm shift. The unit of analysis are the introductory rationale, critical outcomes, Learning Area rationale, specific outcomes and assessment criteria. In the first section the official curriculum is analysed according to Bernstein's concept of integrated knowledge code. In the second section the specific outcomes (SOs), rationale and assessment criteria (ACs) of the eight LAs advocated by C2005 are analysed from the perspective of ideology. In the third section the different forms of knowledge advocated by C2005 are outlined. In the fourth section a brief comparison of C2005 to international trends in curriculum restructuring in some economically developed countries is done.

The next three chapters, Chapters 6, 7 and 8, present the findings of the three case studies as units. Firstly, each chapter begins with 'thick descriptions' (Denzin, 1989a) of each school's socio-historical and current school contexts. This first step in the analysis of data corresponds with the first phase of Thompson's (1990: 281) depth hermeneutical approach: social-historical analysis. Each school is described in terms of its geographic and historic location; socio-economic status, resources available, staff characteristics, and

Matric pass rates. The teachers in the study are briefly described in the teacher profile. The detailed descriptions are intended to emphasize the very great effect, both constraining and enabling, that the context of the school has on the curriculum. Secondly, a formal-discursive analysis of the curriculum practices of each school is presented. This part of the analysis corresponds with Thompson's (1990:281) second phase of analysis as a type of formal or discursive analysis that is concerned primarily with 'the internal organization of symbolic forms, with their structural features, patterns and relations'. Thirdly an interpretation and explanation of the curriculum practices follow. This corresponds to Thompson's third phase of analysis interpretation-re-interpretation. Thompson explained that interpretation builds upon the discursive or formal analysis of the second phase as well as upon the results of socio-historical analysis of the first phase. 'But interpretation involves a new movement of thought: it proceeds by synthesis, by creative construction of possible meaning. This movement of thought is a necessary adjunct to formal or discursive analysis' (*idem*:289). The three cases are interpreted separately to highlight the differences in each school.

Chapter 6 presents the findings of the elite school in the study referred to as Rosewood. The uncanny fit between Bernstein's code theory and curricular practices in this school is reflected on.

Chapter 7 presents the findings of the formerly White advantaged school in the study, referred to as Fernhill. At this socio-economically diverse school a longer discussion is provided to examine the lack of appropriate regulation and control of the 'behaviour' of students that overpowered the intellectual aims of the school. The greater difficulty in applying Bernstein's theory to the unique context of this school is reflected on.

Chapter 8 presents the findings of the former Black school in the study, referred to as Strelitzia. At this school the lack of focussed intellectual enhancement of students is described. The weaker classification and framing contributed to disempowering students.

Chapter 9 presents a comparative analysis of the curriculum practices of the three

schools. The variations across schools in subjects and areas of study offered; knowledge and competences taught; in pedagogy; and in assessment are analysed. The implications of the stratifying effects of the actual curriculum for social reproduction are noted. The existence of three schools with starkly differing curriculum practices, outcomes and life chances for learners is explained by using the theory of globalisation and the consequent marketization of education.

Chapter 10 concludes that the non-interventionist policy of the post-Apartheid government with reference to school development and improvement advantages the previously advantaged who have the economic and intellectual capital to compete and exercise choice to their advantage. The implications for social justice are raised. The limitations of the research are reflected on and areas requiring further research are outlined.

CHAPTER 2

THEORETICAL FRAMEWORK

2.1 Introduction

It has been pointed out in Chapter 1 that Bernstein's notions of integrated and collection codes provided the overarching theoretical framework for the study. According to Bernstein the underlying code is achieved by three message systems of the school: curriculum or knowledge, pedagogy, and assessment. The aim of this chapter is to present the theoretical framework that informs the study in terms of researching actual curriculum practices; sociological theories of the reproduction of social inequalities by education; and educational code theory analysed into knowledge taught, pedagogy, assessment and teacher identities.

How theories should be used in curriculum research is contested (Schwab, 1969; Morrison, 2004; Eisner, 1978). Pinar (1978) categorises work in the field of curriculum into traditionalists, conceptual empiricists and reconceptualists. Whereas traditionalists aim at improving curriculum practices and give scant attention to the development of curriculum theory, the work of conceptual empiricists is based on the traditional methods of the social sciences that 'prescribe data collection, hypothesis substantiation or disconfirmation in the disinterested service of building a body of knowledge' (Pinar, 1978:125). Thus 'one discovers researchers whose primary identity is with a cognate field and view themselves as primarily psychologists, philosophers or sociologists with research interests in schools and education' (*idem*:124). One characteristic of such research is distance from the real curriculum world (Morrison, 2004). After listing the enormous problems that plague the world Morrison (2004:490) writes: 'yet the neat and tidy sphere of curriculum theory continues its sterile, rarefied and self-serving agenda in its safe retreat into the safe house of academe. It is comparatively untouched by the outside world'. In contrast to the conceptual empiricists, the third group 'reconceptualists' acknowledge curriculum research as an inescapably political as well as intellectual act' (Pinar, 1978:125). Thus

according to reconceptualists, curriculum research can never be neutral or stand outside of patterns of power (Apple, 1990; Christie, 1992; Bernstein, 1971, 1996; Malcolm, 1999).

More than thirty years ago Schwab (1969) announced that the curriculum field is moribund and argued that the bulk of curriculum energies be diverted from the theoretic to the practical to the quasi-practical and to the eclectic:

By eclectic I mean the 'arts' by which unsystematic, uneasy, but usable focus on a body of problems is effected among diverse theories, each relevant to the problem in a different way. (*idem*:101.)

Schwab argues that curriculum research must be based in a 'practical' theory. The 'practical' is defined as a discipline concerned with choice and action, in contrast with the theoretic, which is concerned with knowledge (*idem*:101). Like Schwab, Morrison (2004) argues that 'curriculum theory is less a theory and more clusters of concepts and reflective practices about people' (*idem*:491). Similarly, Eisner argues that 'theory does not and cannot tell the whole story' (2000: 355).

According to Morrison 'curriculum discourse should be marked by richness, diversity, discordant voices, fecundity, multiple rationalities and theories and should be touched by humanity and practicality in a hundred thousand contexts' (2004:487). In line with the views of Schwab (1969) and Morrison (2004) I take an eclectic theoretical approach in analysing both the intended and actual curriculum. I worked with multiple theoretical resources because each informed different aspects of the topic. However, Bernstein's conceptualization of educational codes and integrated knowledge as an integrated code characterized by weaker classification and framing or weaker power and control relations provided the overarching theoretical lens informing the study.

The macro theoretical context of the study is social stratification. Social stratification is particularly concerned with the question of socially structured inequalities, of how they originate and are maintained and with what effect. All studies of social stratification are concerned with the central question: Who gets what, why, how, when, where and to what effect? (Savage, 1979). This question indicates that the field

of social stratification is concerned with the 'distributive process' in any society whereby access to the material and non-material 'goods' of that society is regulated. Each society in distributing these 'goods' creates some pattern of socially structured inequalities.

The school has long been recognized by sociologists of education as one of the prime sites for the reproduction of social inequalities particularly the reproduction of social stratification (Gwinbi & Monk, 2003:21). Rist (1970) investigated how the everyday processes of schooling such as labeling and ability grouping are at the root of unequal educational outcomes. Bourdieu (1977) argues that it is the unequal cultural capital that children from the different social classes possess that accounts for inequalities in their scholastic achievement. Bowles and Gintis (1976) emphasized the importance of schooling in forming the different personality types (dominant and subordinate) for different types of work.

In contrast to above explanations that do not focus on the knowledge taught Bernstein argues that unequal student outcomes are due to unequal curriculum practices. Thus Bernstein criticises reproduction theories that disregard knowledge taught as a contributing factor and argues that it is the structure of knowledge that is taught that empowers or disempowers students:

...what is missing from theories of reproduction is any internal analysis of the structure of the discourse itself, and it is the structure of the discourse, the logic of this discourse, which provides the means whereby external power relations can be carried by it. (Bernstein, 1996:19)

Bernstein was critical of theories that are concerned with explaining how external power relations are reproduced by the school and symbolic interactionist theories that take interactions as free from macro power and control relations. In his interactionist code theory Bernstein attempts to bridge the gap between macro- and micro-level theories. Bernstein's work originated as part of a broader sociological concern in the 1960s and 1970s, shared with others such as Willis, to unpack the black box of educational reproduction theory (Jacklin, 2004). What was missing from cultural reproduction theories, according to Bernstein (1996) was a conceptualisation of the

‘structural conditions’ and ‘discursive rules’ of pedagogy that generate practices of inclusion and exclusion. Bernstein highlights the critical impact of schooling and the curriculum in *producing* inequalities, rather than just reproducing inequalities in society. Thus he focussed on ‘what knowledge is taught’ and ‘how it is taught’ that enables inclusion or exclusion in socially valued practices. Bernstein (1990) argues that for other reproduction theorists like Bourdieu and Passeron, pedagogic communication in the school is a relay for patterns of dominance of class, gender, religious and regional relations external to itself. At the micro level, interactionist studies (Delamont, 1976; Stubbs, 1975; Cazden *et al.*, 1972; Edwards, 1980) are concerned to articulate the principles of micro and symbolic interactional communication and practice within the local context of the classroom, oblivious of external power and control relations. Bernstein’s code theory provides an explanation that bridges the gap between macro- and micro-level theories by analysing how pedagogic communication at the micro level reflects macro power relations. The concept of code refers to a ‘regulative principle which underlies various message systems, especially curriculum and pedagogy’ (Atkinson, 1985: 136). For Bernstein the school and the curriculum participate in the institutional construction and distribution of power, with material consequences for ‘at risk’ populations. This aspect is explained fully in the latter part of this chapter.

From a theoretical point of view, Bernstein (2000:368) speculates that in spite of contemporary claims for diverse forms of knowledge, particular modalities are institutionalised for particular groups of children and argues that the diversity of knowledges will not be distributed across institutions and students but will be found in less privileging institutions. The elite institutions will be more selective of their preferred knowledge and manner of transmission and evaluation. Bernstein (2000) claims that the diversity will be filtered through the existing reproductive structures resulting in the present hierarchy of elite and less privileging institutions being maintained:

How will this new diversity of knowledge map onto our present educational institutions? Which institutions are vulnerable to the new claims, to whom will the new knowledge forms be distributed? Will diversity more likely be found

in the less privileging institutions, 'whereas' the elite institutions will be more selective of their preferred knowledge, manner of transmission, and evaluation of staff and students? If this is the case then the diversity of knowledges with their target of weakening boundaries (social, intellectual, procedural) will not be distributed across institutions and students. On the contrary, the diversity will be filtered through the existing reproductive structures and so the present hierarchy of privileging institutions will be maintained. (Bernstein, 2000:368.)

Bernstein (1996) argued that the distribution of different knowledges and their possibilities by the school to different social groups is based not on neutral differences in knowledge but on a distribution of knowledge, which carries unequal value, power and potential. Bernstein (2000:368) speculated that elite institutions would select, teach and evaluate elite knowledge whereas less privileging institutions would select, teach and evaluate diverse forms of knowledge, resulting in the present hierarchy of elite and less privileging institutions being maintained.

Arnot (2004) argues that while Bernstein never investigated what he called 'the full choreography of interaction in the context of the classroom or family', or offered 'a delicate description of the full repertoire of arabesques of interaction within any classroom, staff room or family' (Bernstein, 1997:7) he nevertheless provided the principles of description which are capable of accounting for features relevant to a theory of classroom interaction and organizational contexts. A number of studies have used Bernsteinian concepts to study classroom practices in a principled and systematic way. Morais (2002) researched pedagogic practices in the classroom based on Bernstein's theory of pedagogic discourse. Bourne (2002) researched the role of the teacher in the acquisition of decontextualised knowledge based on Bernstein's concept of framing. Invinson (2004) operationalised Bernstein's concepts of recognition and realization rules to map classroom structuration.

2.2 Educational Codes

Educational code is defined as the underlying principles that shape curriculum, pedagogy and evaluation. The educational code relays 'messages' of power and control implicitly. The traditional collection type is characterized by strongly bounded units of knowledge, hierarchically organized and transmitted through a rigid division of labour among the teaching staff. The integrated curriculum, on the other

hand, has a broader and more fluid structure where units of knowledge are brought into a relationship of interdependence in the study of topics, themes or projects (Bernstein, 1971).

For Bernstein (1971, 1996) integration is not just about robust relations between vertical discourses, it is a change in educational code. Bernstein (1971) argues that the core principal of integrated codes, weak boundary maintenance, is realized both in the structuring of educational knowledge and in the organization of the social relationships (*idem*). From Bernstein's perspective 'differences within, and between, educational knowledge codes ... lie in variations in the strength and nature of the boundary maintaining procedures, as these are given by the classification and framing of knowledge' (*idem*:54). Within a code, framing of knowledge by the teacher in the classroom is as relevant as the structural organization of knowledge by the school. 'Integrated codes ... vary in terms of the strength of frames, as these refer to the teacher/pupil/student control over the knowledge that is transmitted' (*idem*:51).

2.2.1 Collection And Integrated Codes

By identifying two different types of curriculum codes – a collection type and an integrated type, Bernstein draws out the implications of these structural arrangements for the teacher and the pupil. Bernstein uses the concept of classification and framing to formulate the main distinguishing features of the collection and integrated codes. The two educational codes are described as conflicting types each transmitting the three messages systems of the school (curriculum, pedagogy and evaluation) differently and producing different identities. In collection codes strong classification means 'things must be kept apart' whereas in integrated codes weak classification means 'things must be brought together' (Bernstein, 1996:26).

Bernstein (1971) defines integration of knowledge as the subordination of subjects to a relational idea or theme that blurs the boundaries between the subjects.

Because one subject uses the theories of another subject, this type of intellectual interrelationship does not constitute integration. Integration ...refers minimally to the subordination of previously insulated subjects or

courses to some relational idea, which blurs the boundaries between the subjects. (Bernstein, 1971:53.)

Bernstein emphasizes that the relationships between subjects ‘ought’ to be rigorous, robust and at a high conceptual level: ‘there must be some relational idea, a supra-content concept, which focuses upon general principles at a high level of abstraction’ (1971:60). As an example of high conceptual level integration, Bernstein suggests a legitimate integration could be encouraged between biology and sociology in which the relational idea might be issues of order and change examined through the concepts of genetic and cultural codes.

An inherent feature of both inter-disciplinary and trans-disciplinary integration is the lack of sequencing and progression of concepts characteristic of disciplinary based subjects or vertical discourses (Bernstein, 1999). Bernstein argues that ‘whatever the relational concepts are, they will act selectively upon the knowledge within each subject which is to be transmitted. ‘The particulars of each subject are likely to have reduced significance’ (1971:60). The implication of integration for the acquisition of hierarchically structured subjects is picked up later.

2.2.2 Classification

Bernstein developed the concept classification to analyse the relations between the subjects in the curriculum, the power exercised by teachers and the social relations amongst teachers. Thus, according to Bernstein:

Classification ... does not refer to *what* is classified, but to the relationship between contents. Where classification is strong, contents are well insulated from each other by strong boundaries. Where classification is weak there is reduced insulation between contents for the boundaries between contents are weak or blurred. (Bernstein: 1996:56.)

What I must emphasise is that Bernstein points out that classification does not refer to *what* the contents are but to the strength of the boundary maintained between knowledge contents. Strong classification refers to subjects being insulated from each other by strong boundaries. Weak classification refers to weak or blurred boundaries between subjects.

When classification is strong, subjects are insulated from other subjects and each subject has its own unique identity, its own unique voice and its own specialized rules (Bernstein, 1996). Classification strength does not only refer to the modalities of curriculum organisation (integrated/collection code), it is theoretically 'the means by which power relations are transformed into specialised discourse' (Bernstein, 1996:3). 'Strong classification reduces the power of the teacher over what he transmits as he may not over-step the boundary between contents' (Bernstein, 1971:51). By weakening the boundaries between subjects, integrated curricula make possible new forms of social relations amongst staff across hierarchies. On the other hand, collection codes are characterized by strong classification or insulation of specialist teachers who work independently.

Bernstein (1996) argues that 'changes in classification strength change the recognition rules by means of which individuals (learners) are able to recognize the speciality of the context that they are in' (1996:31). The classificatory principle provides the key to the distinguishing feature of the context and orientates the learner to what is expected. Strongly classified discursive contexts make the recognition rules explicit while weakly classified contexts create ambiguity in recognition rules. For example, learners in a strongly classified science and literature class would produce different descriptions of a topic such as birds. Without the recognition rule contextually legitimate communication is not possible. Holland (1981) argued that children from different social class backgrounds possess different recognition rules. The middle class children in his study transformed a weakly classified and framed context into a strongly classified and framed context or a specialised context. Working class children, on the other hand, 'selected a non-specialised recognition rule... that regulates the selection of a non-specialised context' (*idem*:34).

When learners have the recognition rule they are able to recognize the speciality of the context. They are able to distinguish history from geography, for example. It is possible that learners possess the recognition rule but are unable to produce the legitimate communication because they do not possess the realization rule. The realization rule enables them to produce legitimate communication and 'if they do not possess the realization rule, they cannot then speak the expected legitimate text'

(Bernstein, 1996:33). In the case of mathematics it often happens that students fail because they cannot realise the legitimate text although they recognise the context of mathematics.

Bernstein argues that ‘changes in classification strength change the recognition rules by means of which individuals (students) are able to recognize the speciality of the context that they are in’ (1996:31). Strongly classified discursive contexts make the recognition rules explicit while weakly classified contexts create ambiguity in recognition rules. Without the recognition rule contextually legitimate communication is not possible.

2.2.3 Framing

Bernstein developed the concept framing to analyse the control relations demonstrated in the pedagogical relationship. Frame refers to the form of the context in which knowledge is transmitted or received. Framing focuses attention on the strength of control demonstrated by the teacher in maintaining or blurring the boundary between subjects.

Bernstein emphasizes that framing does not refer to the content of knowledge that is framed but to who controls the framing. According to Bernstein:

Frame refers to the strength of the boundary between what may be transmitted and what may not be transmitted. Where framing is strong there is a sharp boundary, where it is weak a blurred boundary between what may and may not be transmitted. Strong framing entails reduced options as in the collection code while weak framing entails a range of options. (Bernstein, 1971:55.)

Bernstein (1996) argues that there are two systems of rules regulated by framing – rules of the social order and rules of the discursive order. He refers to the rules of the social order as regulative discourse and rules of the discursive order as instructional discourse.

Framing of the instructional discourse refers to the nature of the control over:

- The selection of knowledge (who decides what is legitimate knowledge and what isn't?)
- The sequencing of knowledge (who decides what is taught first, second, etc.)
- The pacing of knowledge (who decides the rate of transmission or how time is used?)
- The criteria of assessment (who decides on what is going to be assessed?)

In the pedagogic relationship strong framing refers to explicit control by the teacher and weak framing refers to the arrangement where learners are given some control over knowledge. Thus Bernstein clarifies:

...where framing is strong, the transmitter has explicit control over selection, sequence, pacing, criteria and the social base. Where framing is weak, the acquirer has more *apparent* control (1996: 27).

Strong framing, typical of collection codes, means the teacher visibly controls the selection, sequencing, pacing and evaluation of knowledge and pupils have no control. Weak framing, typical of integrated codes, means pupils have greater control in selecting, sequencing, pacing and evaluation of knowledge. Weak framing is not to be conflated with loss of control. When control is ceded in weak framing it can always be reclaimed. Framing is the means by which the learner acquires the realization rule. It is through framing that the learner gets to know how to generate statements within the grammar of that discourse. There are variations of framing between the two extremes of strong and weak framing.

Bernstein (1996) argues that the boundary between everyday knowledge and educational knowledge is an element of framing. Thus:

There is another aspect of the boundary relationship between what may be taught and what may not be taught and consequently, another aspect to framing. We can consider the relationship between the non-school everyday community knowledge of the teacher or taught, and the educational knowledge transmitted in the pedagogical relationship. We can raise the question of the strength of the boundary, the degree of insulation, between the everyday community knowledge of teacher and taught and educational knowledge. thus, we can consider variations in the strength of frames, as these refer to the strength of the boundary between educational knowledge and everyday community knowledge of teacher and taught (Bernstein 1971: 58).

The strong framing in collection codes 'socialise the child into knowledge frames which discourage connections with everyday realities' (*idem*:58). When framing is relaxed to include everyday realities, it is not simply for the transmission of educational knowledge, but for purposes of social control and for 'less' able children.

The basis of pupil control differs in collection and integrated codes. Collection codes, referring to strong classification and framing, produce units that stand in closed relation to each other. The teacher, a subject specialist probably, will teach in a traditional classroom, regulating what is taught, where and when. The teacher's power to make decisions and frame knowledge will be revealed in the classroom. The learner will be visibly under the teacher's control, and like the teacher, will develop a strong educational identity, e.g. 'Maths is my subject'. Acceptance of the common ground rules of behaviour will ensure respect for ascribed authority. Bernstein argues that 'the stronger the classification and framing the more the educational relationship tends to be hierarchical and ritualised and the pupil seen as ignorant, with little status and few rights' (1971:58).

Whereas, classification refers to the school's curriculum structure, frame refers to the forms of control during interaction. For example, it is possible for a school to blur the boundaries between geography and history by creating a department of social studies, while at the level of the classroom both teacher and pupils clearly distinguish the two subjects.

Integrated codes with weak classification and weak frames emerge when there is a weakening of boundaries between individuals and knowledge. Teachers will co-operate with their colleagues and pupils in the school and the classroom. New forms of dialogue are allowed and authority is personalized and pupils are able to express their individuality and differences. Pupils are given opportunities to practice self-regulation or personal control. The power that the school and the teachers traditionally exercise is shared with students to decide what, when, how, where to learn.

The rules of the social order - or the regulative discourse - refer to the forms that hierarchical relations take in the pedagogic relation and to expectations about conduct,

character and manner (Bernstein, 1996). Bernstein argues that the regulative discourse is a precondition for any pedagogic discourse:

It is of course obvious that all pedagogic discourse creates a moral regulation of the social relations of transmission/acquisition, that is, rules of order, relation and identity, and that such a moral order is prior to, and a condition for, the transmission of competences... regulative discourse is itself the precondition for any pedagogic discourse. (Bernstein, 1990:183.)

Regulation of the social order may continue in the absence of regulation of the discursive order. Thus 'it may well be the case that in some circumstances the school's instructional discourse is suspended and the discourse then is wholly regulative' (Bernstein, 1990:108). This means that before knowledge can be taught, learners are expected to act in an appropriate manner. Iedema (1996) argues that by the time students reach upper primary school; they may be expected to be familiar with quite sophisticated forms of social control and positioning practices based on interiorised forms of control. In case the students' coding orientation lacks such registers of control, misunderstanding or contestation may result, and teacher talk remains largely restricted to control aspects and instructional discourse cannot take over from regulative discourse. Furthermore without such communal agreement classroom practices may not become regularized or routinised, which will make progress unlikely. Iedema (1996) concludes that:

Rather than leaving the acquisition of these sophisticated kinds of modulation up to chance, as is the case in current educational practices, they could be made 'visible' and programs could be devised which explicitly deal with modalities and realizations of control and with teacher-student relations, benefiting those whose social backgrounds do not operate within such highly time-distanciated modes of interpersonal control. (Iedema, 1996:100.)

While the instructional discourse is embedded in the regulative discourse, and it is not possible to proceed with the instructional discourse without the regulative discourse, it is possible to have the regulative discourse without the instructional discourse, i.e. it is possible to regulate learner behaviour even when no transmission of instructional content is taking place.

The concept framing focuses attention on the visibility of the pedagogy.

In the case of invisible pedagogic practice it is as if the pupil is the author of the practice and even the authority, whereas in the case of visible practices it clearly is the teacher who is author and authority. Further, classification would be strong in the case of visible forms but weak in the case of invisible forms. (Bernstein, 1990:185.)

Where framing is strong, a visible pedagogic practice ensues. The rules of the instructional and regulative order are explicit. Where framing is weak an invisible pedagogic practice is likely. Here the rules of the regulative and instructional discourse are implicit and largely unknown to the acquirer.

Within the classroom, teacher and pupil interact, negotiating what should be learnt, at what pace and in what way. There is, however, a limit to the negotiation, for the structure of the school and the classroom imposes constraints upon both the teacher and the student. There is also a limit to the negotiation by pupils because the authority invested in the teacher, the limits of space and time, the demands of examination syllabuses all affect the degree to which both teacher and pupil can influence the learning process. These constraints determine the child's consciousness of his or her potential to participate, negotiate and control his or her own experience. The different strengths of framing impact on the pupil's awareness of being able to make decisions, to participate, negotiate and control their learning experiences. Hence, '...principles of power and social control are realized through educational knowledge codes, and through the codes they enter into, and shape consciousness' (Bernstein, 1971:54).

2.3 Organisational Structure

The organizational aspects of the curriculum include the dimensions: curriculum content, timetabling, pupil grouping, pupil choice, basis of pupil control and social structures like subject departments that teachers participate in. These aspects operate at the school level and can be described apart from classroom interactions.

The organizational arrangements differ in collection and integrated codes and are tabulated by Arnot (OUP, 1997) as:

Table 2.1 Organisational elements of collection and integrated codes

Dimension	Collection Code	Integrated Code
Curriculum content	Separate subjects	Enquiry activities
Organisation of teaching and learning	Rigid timetabling	Flexible timetabling
Pupil grouping	Homogenous	Heterogeneous
Pupil choice	Limited	Extensive
Assessment	Single mode	Multiple mode
Basis of pupil control	Position in hierarchy	Personal relations
Teachers' role	Independent	Interdependent

An integrated code is typified by a less rigid social structure or weaker classification and framing, enabling greater options for teachers and pupils. Communication among teachers and between teachers and pupils takes on a new and more personal character. By crossing the boundaries between subjects, integrated curricula make possible new forms of social order, altering the traditional relationships of authority within educational institutions. The less rigid social structure of integrated codes create greater opportunities for teachers and pupils to choose, to make decisions and exercise control over curriculum, pedagogy and evaluation. For example, pupils are told where to study in collection codes while in integrated codes pupils have choices of where to study.

In collection codes the contents of the curriculum are strongly classified separate subjects that are compulsory and ‘... there are relatively few options available to teacher, and especially taught, over the transmission of knowledge because curricula and syllabi are very explicit’ (Bernstein, 1971:52). In integrated codes weaker classification means subjects are subordinated to a relational idea or overarching concept that blurs the boundaries between the subjects. Pupils have greater choice of what to study since ‘a far greater range of subjects can be taken and are capable of combination’. The insulation between educational knowledge and everyday community knowledge is weaker... The range of options available to pupils within the pedagogical relationship is ... greater’ (*idem*:53).

In collection codes rigid timetabling controls when pupils learn different subjects. In contrast, flexible timetabling of integrated codes give pupils greater choice in deciding when to learn what.

In collection codes pupils are strongly classified according to academic ability into separate class groups. Bright and weak pupils are kept apart and taught different subjects or different knowledge. 'Curricula are graded for particular ability groups. There can be high insulation between a subject and a class of pupils. D stream secondary pupils will not have access to certain subjects, and A stream students will also not have access to certain subjects' (*idem*:53). In contrast, integrated codes are characterized by heterogeneous grouping of pupils. Pupils of different abilities are grouped together. Pupils may be allowed to choose their own groups.

Assessment varies in collection and integrated codes in terms of what is assessed and how assessment takes place. Bernstein argues that it is likely that integrated codes will give rise to multiple criteria (*idem*:66). Firstly, the 'inner attributes' of the student and 'the right attitude' are emphasized in terms of the fit between the pupil's attitude and the current ideology' (*idem*:66). Further, if the student has the right attitude then 'this will result later in the attainment of various specific competencies' (*idem*:66). Secondly, cognitive criteria may be less valued than socio-affective competences, thus 'it is possible that the evaluative criteria ... may be weak as these refer to specific cognitive attributes but strong as they refer to dispositional attributes' (Bernstein, 1971:66). This provided the analytical framework for analysing cognitive and socio-affective competences.

Bernstein (1971) argues that it is likely that integrated codes will give rise to multiple criteria of assessment compared with collection codes. In collection codes formal assessment of individual cognitive ability by the teacher is favoured: 'In the case of collection codes, evaluation at the secondary level often consists of the fit between a narrow range of specific competencies and states of knowledge and previously established criteria ...' (*idem*:65). In integrated codes social competences are as important as cognitive competences '...the evaluative criteria of integrated codes with weak frames may be weak as these refer to specific cognitive attributes, but strong as these refer to dispositional attributes' and 'assessment takes more into account 'inner'

attributes of the student... the 'right' attitude may be assessed in terms of the fit between the pupil's attitudes and current ideology' (*idem*:65). Teachers are expected to have greater cognitive competences across subjects to assess the significance of what has been learned according to the cognitive norms and values of integrated subjects. Single mode assessment is common in the collection code while multiple mode assessment is typical of integrated codes. Collection codes would be characterized by traditional, formal assessment of the individual pupils competences by the teacher while in integrated codes peer and self-assessment would also be done.

Integrated codes may appear to break down the discipline and authority exerted upon the child, but they are more likely to represent an extension of control over the child (Bernstein 1971). New and more personal aspects of the child are made public to the teacher and supervision is more constant, more careful and more intimate.

Reproduction of a collection code is possible through the structural organization of the school, and in case of an integrated code, the weak frames ensure the perpetuation of the school order by hiding the underlying power of the teacher. Each code represents a different type of social control. Social control is never absent, only reformulated. '...Strong frames reduce the power of the pupil over what, when and how he receives knowledge and increases the power of the teacher in the pedagogical relationship' (Bernstein, 1971:51).

The social interaction amongst teachers is also different. In collection codes teachers work independently while in integrated codes teachers work interdependently. 'Now the integrated code will require teachers of different subjects to enter into social relationships with each other which will arise ... out of a shared, co-operative, educational task' (*idem*:62), whereas 'in collection codes strong subject identity are continuously strengthened through social interaction within the department and through the insulation between departments' (*idem*:61).

The underlying theory of learning of collection code is likely to be didactic whilst the underlying theory of learning of integrated codes may well be more group or self-regulated (*idem*:61).

Arnot (OUP) argues that the two concepts, classification and frame, constitute in combination what Bernstein calls the educational code, a term which describes any educational system by reference to both classification and frame. The code embodies the two structural concepts – it is the grammar of the educational system. It sets the rules of how to join together and separate the categories of people and knowledge. It organizes the authority and power structures of the school as well as the form of the three message systems, curriculum, pedagogy and evaluation. It is found in every structure of educational transmission and is the most fundamental feature of socialization. The individual acquires the code and is able to produce personal interpretations and meanings within its framework.

2.4 Forms Of Knowledge

Bernstein (1999) distinguishes two fundamental forms of knowledge, horizontal and vertical discourses on the basis of structure, their mode of transmission and their mode of acquisition. The philosophers of education Peters (1972), Hirst (1974) and Phenix (1978) argue that the disciplinary forms of knowledge are distinct from each other on the basis of their concepts and tests for truth.

2.4.1 Horizontal And Vertical Discourses

Although the terminology varies, there is widespread agreement on the fundamental differences between everyday knowledge and specialist knowledge. Habermas cited in Bernstein (1999) distinguishes one form as constructing the life-world of the individual and the other as the source of instrumental rationality. Bourdieu (1993) refers to these forms in terms of the function that they give rise to, one form creating symbolic, the other practical mastery. Morais (2002), developing on Bernstein's concepts, referred to these as academic and non-academic knowledge. Muller (2003), in line with Bernstein, distinguishes between the community code and the school code.

Horizontal knowledge discourses (Bernstein, 1999) or everyday knowledge is based in the local, experiential world of learners. Meanings in everyday knowledge are

directly attached to a material base and a context. It is knowledge that is local, segmental, context-dependent, is often contradictory across contexts but not within a context. Muller (2003) calls the language used in horizontal discourses the community code. It is colloquial language that is not linguistically elaborated and used with family, friends or in peer group settings. This code makes sense in local contexts. This knowledge and language enables competence within a particular context. It acts as a social and cultural relay for the community (Muller, 2003).

According to Muller (2004), following Bernstein, horizontal discourse is a form of sense making that is segmental and has no recontextualising principle – it has no principled way to extend the knowledge structure vertically. The segmental organisation of horizontal discourse leads to segmentally structured acquisitions (Bernstein, 1996:160). What is acquired in one segment or context and how it is acquired may bear no relation to what is acquired or how it is acquired in another segment or context.

In contrast to horizontal discourses, vertical discourses have an indirect relation to a material base and unite two worlds. Specialised forms of knowledge, or expert systems ‘lead to a disembedding of individuals from their local experiential world’ (Bernstein, 1999:158). Vertical knowledge discourses apply across contexts and the concepts are generally applicable. The school code (Muller, 2003) transcends local contexts and is orientated to common meaning across specific contexts. Bernstein (1971) argues that ‘educational knowledge is uncommonsense knowledge - it is knowledge freed from the particular, the local through the various languages of the sciences or forms of reflexivity of the arts which make possible either the creation or the discovery of new realities’ (*idem*:58). Also, all forms of vertical discourse, unlike horizontal discourse, have either horizontal or vertical knowledge structures.

Bernstein (1999) distinguishes between two types of vertical knowledge discourses – depending on whether they are hierarchical or horizontally organized. Physics is an example of a hierarchically organized vertical discourse. The general concepts and theories are based on uniformities across a range of specific contexts. The second type of vertical discourse with horizontally organized knowledge structures such as the humanities and mathematics consists of specialized languages with specialized

modes of interrogation and criteria for the construction and circulation of texts. Mathematics, for example, has different sections like geometry, algebra, trigonometry and calculus that are not put into a single hierarchy although within each there is a conceptual hierarchy. The procedures and meanings of vertical discourse are linked hierarchically.

Muller (2000) argues that a central problematic of the curriculum concerns the relations between the two forms of knowledge that can be summed up in the question: 'How can or should the common-sense knowledge of experience and local culture, indeed of the everyday world, relate to the codified knowledge deemed worthy of inclusion and certification in the formal curriculum?' (Muller, 2000:13).

Psychologists of learning have stressed the necessity of connecting the curriculum and, how teachers teach it, to the prior knowledge that students possess through which they make sense of what they are asked to learn (Leinhardt, 1992).

Bernstein (1996, 1999) argues that the insertion of horizontal discourse in school subjects is confined to particular social groups, usually the less able. When this is done the basic, utilitarian value of vertical discourse is emphasized and may be linked to improving the student's ability to deal with issues arising in the everyday world: issues of health, work, parenting, domestic skills (Bernstein, 1999:160). When this happens: 'vertical discourses are reduced to a set of strategies to become resources for allegedly improving the effectiveness of the repertoires made available in horizontal discourse' (1999:169). Dowling (1993) showed how mathematical texts constructed for lower 'ability levels' drawn from everyday knowledge orient the student to a world of manual practice and activity to be managed by restricted mathematical operations.

Empowering marginalized 'voices' is another motive for inserting horizontal discourses into vertical discourses: 'Horizontal discourse may be seen as a crucial resource for pedagogic populism in the name of empowering or unsilencing voices to combat the elitism and alleged authoritarianism of vertical discourse' (Bernstein, 1999:169).

Bernstein argues that personal experiences and the voices of learners are important but should not exhaust the pedagogic encounter:

I should make it quiet clear that it is crucial for students to know and to feel that they, the experiences that have shaped them, and their modes of knowing are recognized, respected and valued. But this does not mean that this exhausts the pedagogic encounter. For, to see the pedagogic encounter only in terms of a range of potential voices and their relation to each other is to avoid the issue of pedagogy itself, i.e. the appropriate classification and framing modality. (Bernstein, 1999:172.)

For Bernstein, personal change and enhancement through the appropriation and remaking of knowledge is part of what education should mean. Based on empirical research, in Portugal, Morais (2002) advocates strong classification between academic and non-academic discourses, especially for children of the working classes who have difficulty in recognising the legitimate text when framing is weak.

2.4.2 Distinct Forms Of Knowledge

While Bernstein distinguishes between two forms of vertical discourses in terms of their structure the philosophers of education argue that there are seven distinct forms of vertical discourses that are distinct ways of knowing with their own distinctive concepts, linguistic structures and tests for truth. The seven distinct 'forms of knowledge' according to Hirst (1974) are: the empirical (physical sciences), the mathematical, the philosophical, the moral, the aesthetic (literature and the fine arts), the religious and the historical/sociological. These forms of knowledge, Hirst (1974) argues, have resulted from the meaning humans have made of their experience over the years. Each of these forms of knowledge constitutes a network of interrelated concepts that are logically independent of the network of other forms and each has its own ways of testing the truth claims it makes. The description of an eagle in the context of literature would not be valid in a science context. For example, space, time and cause are essential concepts in the empirical form; number, integer and fraction are essential concepts in the mathematical form; and event, cause and action are essential concepts in the historical form of knowledge.

Current research indicates the distinctness of the epistemic operations of the subject disciplines. Pontecorvo (1993) identified the following historical epistemic operations: definitions; evaluations; categorizations; appeals to the textual aspect of historical sources; the aims of a social agent, rules, general principals, consequences and implications, socio-cultural context and spatial and temporal context. Mason (1996) identified the following scientific epistemic operations: definition, identification of significant variables, relation, generalization, solution, application, metacognitive reflection and appeal to or the action of supporting a claim. Harel (2004) identified the notion of proof, formalisation, symbolisation and representations as unique epistemic operation of mathematics.

A similar view of the distinctness of the disciplines comes from Wineburg and Grossman (2000):

That the study of rocks gives rise to geology, of trees to botany, of kingships to diplomatic history, with each field possessing its own means of inquiry, methods of verification, and criteria of judgment, is more than mere coincidence. These differences reflect the intrinsic complexity of the varied phenomena of human life. (Wineburg and Grossman, 2000: 3.)

In a similar vein, Bernstein argues that the different horizontal knowledge structures are distinct from each other:

The set of languages that constitute any one horizontal knowledge structure are not translatable, since they make different and often opposing assumptions, with each language having its own criteria for legitimate texts, what counts as evidence and what counts as legitimate questions or a legitimate problematic (Bernstein, 1999:163).

Like Bernstein, Phenix (1978) argues that conceptual or disciplinary knowledge is very different from everyday knowledge. According to Phenix, from a very early age, all of us are exposed to many different kinds of sensory inputs. To make sense of the world with its multitude of objects and experiences which Phenix calls 'particulars' we have to learn to put particulars together into groups of things. In other words, we have to learn to generalise. Concepts help us to reduce the complexity of the world by subsuming an indefinite number of particulars into a concept. 'Concepts are classes of particulars' (1978:85). By giving us concepts disciplinary knowledge, according to

Phenix, does not make life difficult, it makes life easier. Phenix is dismissive of everyday knowledge: 'Our humanness rests upon a wise ascetism, not upon indiscriminate hospitality to every message impinging us from the world about us' (1978:85).

Peters (1972) explains the difference between skills and games on the one hand and subject knowledge on the other in terms of the amount there is to know, transferability of knowledge and the cognitive content of each. Skills do not have a wide-ranging cognitive content and there is little to know and knowing a skill throws very little light on other things:

Skills, for instance, do not have a wide-ranging cognitive content. There is little to know about riding bicycles, swimming or golf. It is largely a matter of 'knowing how' rather than 'knowing that', of knack rather than of understanding. Furthermore, what there is to know throws very little light on much else (Peters, 1972:159).

The school subjects, in contrast, have a wide-ranging cognitive context and there is an immense amount to know and once known transfers to 'illuminate other areas of life and contribute much to the quality of living'.

Curriculum activities ... such as science, history, literary appreciation, and poetry...illuminate other areas of life and contribute much to the quality of living. They have secondly, a wide-ranging cognitive content which distinguishes them from games. In history, science, or literature ... there is an immense amount to know, and if it is properly assimilated, it constantly throws light on, widens, and deepens one's view of countless other things. (Peters, 1972:159.)

In addition to the wide-ranging cognitive content of the subjects the cognitive complexity expected differs. Bloom's revised taxonomy, developed by Anderson *et al.* (2001), distinguishes six cognitive processes that learners could be engaged: remember, understand, apply, analyse, evaluate and create. In analysing the goals of mathematics education De Lange (1997) distinguishes three levels according to lower, middle and higher level of goals. The lower level 'concerns the knowledge of objects, definitions, technical skills and standard algorithms. Straightforward 'real life' problems can be at the lower level too. The lower level does not mean that questions

are easy, as they can be difficult. What distinguishes the lower from the middle level is 'it does not demand much insight; it can be solved by using routine skills or even by rote learning' (*idem*:15). The meaningless application of procedures to solve problems without conceptual understanding is typical of the lower level.

The middle level is characterized by having pupils relate two or more concepts or procedures. Conceptual understanding is necessary and 'making connections, integration and problem solving are terms often used to describe this level. Problems that require different strategies for solving, or offer more than one approach to a solution are at this level. Students are required to use their own strategies as these are not routine procedures required. Students need to read carefully, reason well and make decisions about what strategies to use.

The higher level involves complex matters like creative thinking and reasoning, communication, critical attitude, creativity, interpretation, reflection, generalization and problem solving. Students' own constructions are a major component of this level. The process is more important than the product.

Goodson (1987) outlined three traditions that recur in the history of the school subject. The high status academic tradition that is content-focused typically stresses abstract and theoretical knowledge for examination. Utilitarianism or social and economic efficiency focuses on the role of the schools in preparing students for future employment and satisfying the needs of society. Goodson notes that the utilitarian tradition is of low status as it deals with practical knowledge not amenable to written examination. A variation of utilitarianism is social reconstructionism that stresses that schools should develop students' ability to improve and change society. Treasured values are equality, tolerance and acceptance of diversity. This value system is derived from immense dissatisfaction with the status quo and seeks to challenge it through participation in democratic processes. The pedagogic tradition places the way children learn as the central concern in devising subject content. Personal, social and common sense knowledge is pursued and is also regarded as low status.

Moore and Young (2001) argue that a social theory that seeks to link knowledge to social interest has to distinguish between two types of interest: the 'external' interest

which reflects wider divisions in society (inequalities of social class, gender or race); and the 'internal' interest, concerned with the production and acquisition of knowledge itself. The cognitive or 'internal' interest means that the motives are intellectual gains too in addition to 'power, prestige, money...' (2001:454). Schmaus cited in Moore and Young (2001) argues that cognitive goals must not always be reduced to non-cognitive goals and interests. They point out the arbitrariness of excluding cognitive interests by adopting reductive sociological approaches.

2.4.3 Acquisition And Transmission Of Forms Of Knowledge

Bernstein (1999) argues that vertical and horizontal discourses are associated with different modes of acquisition. Whereas knowing common-sense knowledge and using the language required for it is learned tacitly in informal contexts, vertical discourses can only be acquired when explicitly recontextualised and taught. The acquisition of segmental competences or literacies, unlike the procedures of vertical discourses, is likely to be tacit, with reduced or condensed linguistic elaboration, acquired often, for example, through a pedagogy of modelling. In contrast, acquisition of vertical discourses 'requires effectively trained, committed, motivated ... teachers ... operating in a context which provides the conditions for effective acquisition ... (Bernstein, 1996:8). Peters and Hirst (1971) argue that students would not learn such complex knowledge structures without being explicitly taught it:

The notion that by simply living in, and exploring freely, even their social as well as their material context, pupils could acquire the sophisticated, rule-governed principles and procedures we wish them to acquire, for instance when things are correct or incorrect, valid or invalid, etc. would be laughable if it were not so frequently assumed. (*idem*:77.)

However, because a discourse is horizontal and is segmentally realised, it is, of course, possible that some segments may be realized by vertical discourse (Bernstein, 1996). The converse does not happen, vertical discourses cannot be realized by horizontal discourses. But, it can happen that pedagogic practice might reduce a vertical discourse into a horizontal discourse within an institutional context. Daniels (2001), following Bernstein, argues that providing learners with experiences that lead

to their positioning within a segmental horizontal discourse are unlikely to enable them to access the analytical power and the ‘cultural capital’ of scientific concepts. When this happens those who are situated in advantaging contexts are further advantaged. Bourne (2002) shows that strong framing by the teacher is essential for the acquisition of decontextualised language.

Bernstein distinguishes between the segmental pedagogy of horizontal discourse from the institutional pedagogy of vertical discourse. Unlike horizontal discourses, the institutional or official pedagogy of vertical discourse is not consumed at the point of its contextual delivery, but is an ongoing process in extended time. Progression and sequencing of conceptual knowledge from basic or fundamental concepts to more abstract concepts are critical for understanding and acquisition of conceptual knowledge. As Moss explains: ‘forms of knowledge in school settings are always sequentially ordered, ... what is known now, gains its significance from what comes next, as well as what has gone before’ (2001:4). Explicit recontextualisation from the context of production of knowledge to the context of reproduction of knowledge in the school is a necessary prerequisite of vertical discourses. In addition, induction into vertical discourses and acquisition of vertical discourses is based on pedagogic judgment given by the teacher.

Pedagogy, as a Bernsteinian concept, functions at a higher level of abstraction referring to varying sets of rules and principles, and to devices generating different sorts of practices, producing different kinds of identities (Solomon 1999). Bernstein (1999) distinguishes three basic forms of pedagogic relation: explicit, implicit and tacit. Explicit and implicit refer to a pedagogic relation where there is a purposeful intention to initiate, modify, develop or change knowledge, conduct or practice by someone who already possesses the necessary resources and the means of evaluating the acquisition. Explicit or implicit refers to the visibility of the transmitter’s intention. In the case of explicit pedagogy, the intention is highly visible, whereas in the case of implicit pedagogy, the intention from the point of view of the acquirer is invisible. The tacit is a pedagogic relation where initiation, modification, development or change of knowledge, conduct or practice occurs where neither of the members may be aware of it. Competences in the vertical and horizontal discourses are acquired via different pedagogic modes. Because horizontal discourses are

segmental, contextually specific, context dependent and embedded in ongoing practices and directed towards specific goals, their activation requires the local context, practices and relationships. Where the context is absent, the competence cannot be demonstrated. A segmental competence has a specific, limited realization – they are culturally localized within a range of realization strategies. The acquisition of segmental competences is likely to be tacit with reduced linguistic elaboration often through a pedagogy of modelling.

Bernstein (1990) draws an interesting distinction between what he terms ‘conservative’ forms of teaching and ‘radical’ forms of teaching. Both of these pedagogic practices are ‘visible pedagogy’ and emphasise ‘a logic of transmission’ in contrast to the ‘logic of acquisition’ emphasized by child centred ‘invisible’ pedagogy. In the case of a logic of acquisition the focus is upon the development of shared competences in which the acquirer is active in regulating an implicit facilitating practice. In the case of a logic of transmission, the emphasis is upon the explicit effective ordering of the discourse to be acquired by the transmitter (Bernstein, 1990). While conservative pedagogy inducts students into symbolic forms of knowledge as given radical pedagogy would facilitate access to symbolic forms and to critique of it.

Because vertical discourses are linguistically elaborated and conceptually rich they can only be learned in formal contexts aimed at explicitly teaching these competences. If learners are not explicitly given access to the grammar of a vertical discourse then it cannot be acquired. Support for this view is found in Hegel’s (1969) theory of judgment. For Hegel (1969) one’s arrival at the notion or concept cannot escape the operation of judgment. Drawing on Hegel, Davis (2003) argues that pedagogic judgment is essential for vertical discourses to be acquired. Based on an analysis of a series of tasks found in a South African grade four mathematics texts Davis (2001) concludes that the negation of pedagogic judgment ultimately serves to negate mathematics as well:

The uncritical affirmation – whether explicitly or in silence – ultimately serves ...to negate pedagogic judgment as well as mathematics. (Davis, 2001:11.)

A pedagogy with explicit evaluative judgement given would correspond with Bernstein's notion of explicit pedagogy characterised by strong framing.

2.5 Educational Identity

With reference to epistemological identity, Bernstein (1971:56) argues that, through systematic socialisation into subject loyalty it is the discipline-centred subject that becomes the linchpin of teachers' identity. Bernstein argues that the strong classification of the subject that imbues it with specificity through its own voice, its own identity and own structure 'presupposes strong boundary maintainers' (Bernstein, 1971:51) or teachers with strong subject identities:

Where classification is strong, the boundaries between the different contents are sharply drawn...this presupposes strong boundary maintainers. Strong classification...creates a strong sense of membership in a particular class and so a specific identity. (Bernstein, 1971:51.)

Muir (1980) argues that teachers do not in serious discussion raise questions about the legitimacy of what constitutes knowledge. Holly (1973) maintains that the secondary teacher in the conventional school is almost wholly 'subject orientated'. Support for this view is provided by Weston (1980):

Most new secondary teachers, whether they are graduates or not, come to school to teach the subject in which they themselves specialised, and that is naturally their first concern. ... but more experienced teachers can also be so dedicated to their subject that they remain somewhat detached from the rest of the curriculum except when it impinges on their own concerns. (Weston, 1980:126.)

Musgrove (1968) argues that a subject provides teachers with a personal anchorage a sense of who they are and what they stand for. The loyalties of teachers may lie more with their subjects than with the organization employing them and curricular changes may threaten established identities when they involve new social roles.

Bernstein (1971) argues that ‘with the specialized collection code membership is established early in an educational career in terms of a choice between pure and applied, between the sciences and the arts and between having and not having a specific educational identity’ (1971:56). Strong classification creates an educational identity that is pure, clear-cut and bounded.

These specialised identities are continually strengthened through social interactions within the department and through the insulation between departments (Bernstein, 1971). Support for this view is provided by a more recent study of an attempt to weaken the boundary between English and History by Wineburg and Grossman (2003) who highlight the significance of the subject department in secondary schools as the context for teachers’ work.

Once an educational identity is established through systematic socialisation into subject loyalty, it is very difficult to change an educational identity. For Bernstein ‘change of an educational identity is accomplished through a process of resocialisation into a new subject loyalty’ (1971:56).

Bernstein distinguished three forms of identity constructions. Retrospective identities are orientated to past forms of social regulation and ‘favour a return to imaginary certainties of monoculture’; decentred identities are based on and driven by the market or by therapeutic inclinations; and prospective identities ‘argue for a possibility of a new social contract based around issues of difference and community’ (Bernstein, 1996:75).

A significant distinction of subject identity that Bernstein does not include is whether the subject is believed to be pure, objective truth void of power and authority or social constructions that reflect both epistemological truths and race, class and gender biases. Ernest’s (1991) notions of absolutist and fallibilist philosophies of knowledge were used to expand Bernstein’s idea of subject identity. Absolutist philosophy is underpinned by a belief that mathematical truth is certain, objective, absolute, incorrigible and unquestionable. Traditional canonical knowledge is viewed as a rigorous system of pure timeless truth. It is universally valid, value and culture-free. In contrast, an opposing humanized image, informed by constructivist and post-

modernist thought, finds academic support in recent fallibilist philosophies of mathematics (Ernest, 1999). Its basis is a reconceptualised view of the nature of mathematical knowledge as human, corrigible, historically embedded and changing. Mathematical knowledge is fallible and eternally open to revision in its proofs and concepts. From this philosophical perspective mathematics is historically, culturally and socially embedded.

Table 2.2 Educational philosophies and ideologies (adapted from Ernest, 1991:138-139)

Philosophy	Absolutist				Fallibilist
Ideology	Utilitarian		Purist		Social change
Social group	Industrial trainer	Technological pragmatist	Old humanist	Progressive educator	Public educator
View of knowledge	Set of truths and rules	Unquestioned body of useful knowledge	Body of structured pure knowledge	Process view: personalized mathematics	Social constructivism
Theory of ability	Fixed and inherited	Inherited	Inherited	Varies but needs cherishing	Cultural product, not fixed
Goals of education	Back to basics, numeracy and obedience training	Useful mathematics to appropriate level	Transmit body of mathematical knowledge	Self-realisation	Critical awareness and democratic citizenship
Theory of learning	Rote practice/ hard work	Acquiring skill and practical experience	Understanding and application	Activity/ play/ exploration	Questioning, decision making and negotiation
Theory of teaching	Authoritarian, transmission, drill	Skill instructor. Work relevanc	Explain, motivate, pass on structure	Facilitate personal exploration	Discussion, conflict. Questioning of content and pedagogy
Theory of assessment	External testing of basics	External tests and certification, skill profiling	External examination	Teacher led internal assessment	Various modes. Use of social issues and content

Different ideologies and social groups underpin absolutist and fallibilist philosophies of knowledge. The absolutist philosophy of knowledge is underpinned by purist and utilitarian ideologies and the fallibilist philosophy of knowledge is underpinned by ideologies of social change. Of the five social groupings discussed by Ernest (1991:138) four groups: industrial trainer, technological pragmatist, old humanist, and

progressive educator are informed by an absolutist philosophy and the fifth group, public educator, is informed by a social constructivist or fallibilist philosophy. The first two groups, industrial trainer and technological pragmatist are underpinned by utilitarian ideologies while the next two, old humanist and progressive educator are underpinned by purist ideologies. Both the old humanist and progressive educator aim at teaching the structure of the subject, but whereas the old humanist focuses on explaining, motivating and transmitting the structure of the subject the progressive educator facilitates personal exploration of knowledge. Ernest (1991:193) points out the contradiction in the progressive stance between ‘an absolutist view of mathematics and a child-centred theory of school mathematics’. The ‘public educator’ group is informed by an ideology of social change.

In this chapter the theoretical framework of the study in terms of researching actual curriculum practices; sociological explanations of the reproduction of social inequalities by education; and educational code theory analysed into knowledge taught, pedagogy, assessment and teacher identities has been outlined. In the next chapter the conceptual framework of the study is outlined and operationalised into empirical indicators.

CHAPTER 3

CONCEPTUAL FRAMEWORK

3.1 Introduction

Mouton (1996) argues that the theoretical validity of a study depends on adequate conceptualisation. Conceptualisation refers to both the clarification and analysis of key concepts in a study and also to the way in which one's research is integrated into the body of existing theory and research. The previous two chapters clarified how the study is integrated into the body of existing theory and research. Conceptualisation that refers to the underlying theoretical framework that guides and directs the study is undertaken in Chapter 4 where the methodology and methods used are outlined. The aim in this chapter is to firstly, develop a clear, systematic and logical exposition of the specific concepts informing the study and secondly, to point out how each is linked to the research questions informing the study.

3.2 Official And Actual Curriculum

There are many definitions of curriculum. Broadly, these fall into two different approaches, as Stenhouse points out:

We seem to be confronted by two different views of curriculum. On the one hand the curriculum is seen as intention, plan or prescription, an idea about what one would like to happen in schools. On the other it is seen as an existing state of affairs in schools, what does, in fact happen. (Stenhouse, 1975:4.)

In my research project both the plan and the practice are analysed. The terms chosen are 'official curriculum' for the plan and 'actual curriculum' for the practices. While the intention, plan or prescription is necessary to set the framework and guidelines; it is one

factor influencing the actual curriculum or what actually happens in real schools and classrooms. The official curriculum is interpreted and implemented differently in schools. The curriculum the school plans may be different from what is actually taught in different classrooms.

3.3 Curriculum Theory And Research

How does one research the curriculum? Whether the curriculum is viewed as a discipline or a field of study informed by other disciplines would impact on how it can be researched. One group of curriculum specialists according to Pinar (1978), the conceptual empiricists, is strong on the view that education is not a discipline in itself but an area to be studied by the disciplines. In agreement with the conceptual empiricists curriculum in this study is viewed not as a discipline but as a field of study that is informed by the disciplines of sociology, psychology, philosophy and others.

The work of conceptual empiricists is based on the traditional methods of the social sciences that 'prescribe data collection, hypothesis substantiation or disconfirmation in the disinterested service of building a body of knowledge' (Pinar, 1978:125). Thus 'one discovers researchers whose primary identity is with a cognate field and view themselves as primarily psychologists, philosophers or sociologists with research interests in schools and education' (*idem*:124). In contrast to the conceptual empiricists, the third group of curriculum specialists 'reconceptualists' recognise the value-laden perspective and the politically emancipatory intent. Reconceptualists acknowledge curriculum research as an 'inescapable political as well as intellectual act' (Pinar, 1978:125). Thus according to reconceptualists, curriculum research can never be neutral or stand outside of patterns of power (Apple, 1990; Bernstein, 1971, 1996; Christie, 1992; Malcolm, 1999). Thus Pinar (1978) argues that curriculum research 'works to suppress, or to liberate, not only those who conduct the research, and those upon whom it is conducted, but as well those outside the academic subculture' (Pinar, 1978:125). This study of curriculum policy and practice draws on both conceptual-empirical and reconceptualist traditions in curriculum research.

Because concepts and theories focus attention on particular aspects and magnify them, they provide us with a useful focus and language but they also background other aspects and frame and limit what we can see. The terminology has not only utilities but also constraints. Making use of many concepts from different disciplinary perspectives reduces the constraining effect of monotheistic theories and concepts. In line with the views of Schwab (1969) and Morrison (2004) I adopted an eclectic theoretical approach in analysing both the intended and actual curriculum. I worked with multiple theoretical resources because each informed different aspects of the topic. Bernstein's conceptualisation of educational codes and integrated knowledge as an integrated code characterized by weaker classification and framing or weaker power and control relations, explained in detail in Chapter 2, provided the main theoretical lens informing the study.

3.4 Conceptualising Inequalities In Curricula Practices

Bernstein's theory was recruited to study the stratification of the actual curriculum for two reasons: firstly, Bernstein (1996) argued that the different knowledges and their possibilities that the school transmits to different social groups is based not on neutral differences in knowledge but on a distribution of knowledge which carries unequal value, power and potential' (Bernstein: 1996). Secondly, Bernstein (1996) holds that through the local organisation of pedagogic discourse, macro power and control relations are achieved systematically. Bernstein claims that the interrelationships between organizational and knowledge properties at micro levels could be related to the macro level or the 'external social antecedents of such patterns'. Bernstein's (1971, 1996) conceptualisation of the 'structural conditions' and 'discursive rules' of pedagogy that generate practices of inclusion and exclusion provided the lens to analyse the actual curriculum practises in each school.

3.5 Educational Code, Power And Control

Bernstein's conceptualisation of educational codes and the unequal distribution of diverse forms of knowledge across elite and less privileged schools provided the theoretical framework for the sociological study of the intended and actual curriculum. For Bernstein the curriculum reflects the distribution of power and the principles of social control:

How a society selects, classifies, distributes, transmits and evaluates the educational knowledge it considers to be public, reflects both the distribution of power and the principles of social control. (Bernstein, 1971:47.)

Bernstein argued that a change in the organization of knowledge from collection codes to an integrated code threatens the fundamental structures of power and control in society or its basic classifications and frames. The analysis aimed at understanding the relay of power and control relations from macro to micro levels through the internal structuring of pedagogic discourse and the concomitant organization of social relationships. The concept, educational code, is abstract and is inferred from more empirically observable curriculum practices.

- Educational codes are defined as the underlying principles that shape curriculum, pedagogy and evaluation (Bernstein, 1996). While collection codes are associated with hierarchical and stratified knowledge that benefit the middle and elite classes, integrated codes are associated with egalitarian education and the transformation of unjust power and control relations. The 'underlying principles' is the 'hidden curriculum' that refers to power and control relations that ultimately are either for cultural reproduction of the status quo or for social change. He strongly links the integrated knowledge code to social effects. His concepts provided the lens to understand the social dimension of the curriculum.

Bernstein theorises that the collection code is characterized by strong classification and framing resulting in a rigid social structure with few or no options for teachers and students. An integrated code is typified by a less rigid social structure - weaker classification and framing, enabling greater options for teachers and pupils. Three notions are relied on heavily: classification and power, framing and control, and the idea of options or choices. From Bernstein:

- The concept classification is used to analyse the structure of the curriculum.
- The concept framing is used to analyse the teachers' control over the selection, sequencing, pacing and evaluation of knowledge in pedagogic practice.
- The concept of external framing is used to analyse the positioning of everyday knowledge.
- The notion of options available to students and teachers is used to analyse the opportunity for self-regulation for teachers and students.

The concept classification is used to analyse the basic structure of each schools' curricula. Whereas the structure of the curriculum is an act of power that imposes a knowledge and social structure, framing refers to control relations during pedagogic practice that maintain or alter the classification.

3.6 Specific Concepts And Indicators

In the sections that follow the ten focusing concepts that have been used in the study:

- Basic curriculum structure
- Knowledge taught
- Classification of knowledge
- Framing of specialised subject discourses
- Framing of conceptual from everyday knowledge
- Framing of regulative discourses

- Pedagogy
- Assessment
- Social relations
- Identity

They are analysed and operationalised into empirical indicators. The first focusing concept, basic curriculum structure addresses the first research question: what subjects and areas of study were offered? The next six focussing concepts: knowledge taught, classification of knowledge, framing of specialised subject discourses, framing of conceptual from everyday knowledge and framing of regulative discourses address the research questions: what forms of knowledge were teachers teaching and what competences were teachers developing? The seventh focusing concept of pedagogy addresses the research question: what pedagogic modes were teachers using? Assessment as a focusing concept was used to validate interpretations of knowledge and competences valued. The last focusing concept of identity addressed the research question: How were curriculum practices related to teacher identities?

3.6.1 Basic Curriculum Structure

The concept classification or boundary is used to analyse the educational code underpinning both the official and actual curriculum structure and organisation in each school. The classificatory structures of the curriculum that are described are:

- Curriculum content i.e. are these strongly classified conventional subjects/LAs and/or integrated themes or real world problems?
- Timetabling i.e. is time punctuated and used rigidly or flexibly?
- Pupil choice i.e. is there no, limited or extensive choice?
- Pupil grouping, i.e. are pupils kept apart in homogeneous units or brought together in heterogeneous units?
- Basis of pupil control i.e. are pupils totally controlled or are there spaces for self-regulation?

- Socialising structures for teachers like subject departments and associations i.e. are subject teachers apart from other subject teachers or are teachers of different subjects integrated?

The official curriculum structure and each school's actual curriculum structure were analysed in terms of curriculum content, status of subjects/LAs, time allocated and pupil choice. The specific questions addressed were: what subject/LA titles are used; how many subjects/LAs are offered; how much time is allocated to each; what is the status of the subjects/LAs and what choices are given to pupils? What similarities and differences in curriculum structure are there across schools? What similarities and differences in curriculum structure are there between policy and practice?

The concept of status of the subject or LA was added. The status of the subjects/LAs was deduced from the amount of time allocated to each.

The organizational structures of each school that indicate an educational code are pupil grouping, basis of pupil control and socializing structures for teachers such as subject departments as encouraging insulation or integration. The specific questions looked at are: are pupils grouped in homogeneous groups or brought together in heterogeneous units; are pupils totally controlled or are there opportunities for self-regulation; and what socializing structures do teachers participate in?

3.6.2 What Knowledge Was Taught?

Bernstein strongly links the integrated knowledge code to social effects. His concepts provided the lens to understand the social intentions of the official curriculum and the social effects of the actual curriculum. As Singh and Luke (1996) hold, these are indeed, very powerful analytical concepts for the sociological analysis that I do. They, however, did not enable me to say anything about what knowledge is classified and what knowledge is framed. Further strong or weak classifications are not ends in themselves but means towards the end of intellectual enhancement. In other words, one may have

strong or weak classification with much or no intellectual enhancement of students. I therefore drew on other theories and concepts additively.

The knowledge taught by teachers was analysed according to: whether it was academic or utilitarian subject knowledge; whether it was conceptual subject knowledge or everyday knowledge; whether it was integrated knowledge in terms of integrated subject knowledge or integrated everyday knowledge; and whether knowledge was presented as absolutist or fallibilist.

The indicators of academic knowledge were:

- Traditional, academic subject knowledge, values, skills and attitudes was taught. The epistemic operations of the subject were explicit. The specialised language of the subject was used. Academic values and attitudes, for example, the development of a scientific attitude in science, are distinguished from social attitudes and values. The lesson is content-focused and stressed abstract and theoretical knowledge for examination.
- The teaching of knowledge, skills, values and attitudes were disaggregated per subject or LA. For example empirically there may be strong classification with just explicit teaching of the stock of knowledge and little teaching of the skills of inquiry of the subject and its particular attitudes and values.

The indicators of utilitarian subject knowledge were:

- Subject knowledge that was immediately useful was being taught, for example in science the section on electricity was being taught as ‘how to wire a plug’.
- Subject knowledge that prepared students for future employment was taught, for example in language classes the topic ‘qualities of a good worker’ was taught.
- Subject knowledge that prepared students for social reconstruction was taught, for example the aim was to develop students’ ability to improve and change society. Treasured values were equality, tolerance and acceptance of diversity.

The indicators of everyday subject knowledge and integrated everyday knowledge were:

- Knowledge drawn from the local, experiential world of learners.
- Segmental, and context-dependent knowledge.
- The language used was colloquial and not linguistically elaborated

The indicators of integrated subject knowledge were:

- Subject knowledge, skills, values and attitudes across subjects were valued.
- Concepts, skills and attitudes from different subjects were required to solve problems set.
- The specialised language of many subjects were required.

The indicators of degrees of cognitive complexity taught were analysed according to a five-point scale:

0 - Where a subject or area of learning was not offered in a school the value of 0 was allocated.

1 - Very simple cognitive competences – recall, reproduction of everyday common-sense knowledge.

2 - Simple cognitive competences – recall, reproduction of subject knowledge and facts.

3 - Complex cognitive competences requiring deep conceptual understanding for problem-solving using creative and critical thinking, application of knowledge in a subject.

4 - Very complex cognitive competences requiring deep conceptual understanding for problem-solving using creative and critical thinking, application of theory and synthesizing of knowledge from many subjects.

The indicators of an absolutist knowledge philosophy were:

- knowledge was presented as pure, incorrigible and fixed.

The indicators of a fallibilist or social-constructivist knowledge philosophy were:

- knowledge was presented as tentative or socially, historically and culturally embedded.

3.6.3 Discursive Relations - Classification

The concept classification (Bernstein, 1971) is used to analyse the degree of insulation of the subject. The concept of classification is related to both power relations in maintaining boundaries as well as to enabling or constraining intellectual development in a subject or LA.

Strong classification refers to strong subject insulation in which each subject has its own unique identity and voice.

Weak classification refers to weak subject insulation or strong integration that has been disaggregated into three types:

- High conceptual level integration that is cognitively challenging indicated by: the interplay of knowledge from at least three subjects used in an interdisciplinary manner; application of theoretical knowledge to solve problems;
- Low conceptual level integration with low cognitive challenge indicated by everyday contextual knowledge dominating the curriculum, recycling of everyday knowledge for direct utilitarian value, lack of extension from the everyday – students remain at the everyday level;

- Whimsical, nonsensical integration with fragmented, isolated, gobbets of factual knowledge from different subjects transmitted that negate conceptual progression and confound meaning making.

3.6.4 Framing Of Instructional Discourse

- The concept framing is used to analyse who controls what knowledge is acceptable and what is not.

The indicators of strong framing used in this study were:

- Strong boundary maintenance between subjects with explicit and visible control over selection, sequencing, pacing and evaluation of knowledge.
- High frequency of exposition or explanation of subject concepts and skills.
- High frequency of evaluative judgment on what is legitimate, what is left out and what is illegitimate.
- Greater teacher led questioning.
- Stringent requirements for use of the specialist language of the subject.

The indicators of weak framing used in this study were:

- Students have greater control in selecting, sequencing, pacing and evaluation of knowledge.
- High frequency of student discussion and formal ‘report backs’ by students; teacher attentive to feedback from students.
- Lower frequency or withholding of evaluative judgment by the teacher.
- Minimal correction of students’ misconceptions, absence of stringent requirements for use of specialist subject language.

3.6.5 Framing Relations Between Everyday And Conceptual Knowledge

Another aspect of framing of knowledge in the pedagogical relationship, Bernstein (1971) argues is the relationship between school knowledge and the everyday, commonsense knowledge of the pupil.

Strong framing was indicated by two actions:

- The teacher starts from what is familiar to students.
- The teacher recruits everyday knowledge to illustrate subject concepts.

Weak framing was indicated by:

- Allowing pupils to use everyday knowledge to formulate answers, to make models and in their presentations.

3.6.6 Framing Of Regulative Discourse

The rules of the social order or the regulative discourse refer to the forms that hierarchical relations take in the pedagogic relation and to expectations about conduct, character and manner (Bernstein, 1996). Bernstein argues that the regulative discourse is a precondition for any pedagogic discourse.

Strong framing of the regulative discourse is indicated by:

- Inter-positional control
- Students do not ask questions.

Weak framing of the regulative discourse is indicated by:

- Personalised control.
- Students are encouraged and allowed to ask questions.

3.6.7 Pedagogy

Pedagogy is analysed according to visibility and the explicitness of the recognition rules of the subject or LA. In the case of explicit pedagogy, the pedagogic intention is highly visible, whereas in the case of implicit pedagogy, the pedagogic intention from the point of view of the acquirer is invisible.

Recognition rules were analysed according to:

- unambiguous and explicit;
- ambiguous and implicit;
- unknown, student is confused or mystified.

3.6.8 Assessment

The assessment practices of teachers were analysed to triangulate the coding of knowledge taught by teachers and the pedagogy used by teachers.

Assessment of collection codes was indicated by:

- Single mode assessment
- Cognitive competences are assessed

Integrated assessment was indicated by:

- Multiple modes of assessment
- Socio-affective and cognitive competences being assessed

3.6.9 Relations Amongst Teachers

Bernstein argues that collection and integrated codes predispose different forms of social relations amongst teachers.

Social relations underpinned by the integrated code was indicated by:

- Social interactions of a more personal nature amongst teachers of different subjects.
- Social interactions amongst teachers of different subjects that arise out of shared, co-operative, educational tasks.

Social relations underpinned by the collection code was indicated by:

- Social interactions amongst teachers within subject departments.
- Social interactions around non-educational issues (not subject related).

3.6.10 Identity

There are many theories of identity – I focused on the notion of epistemological identity. Whether the subject was the linchpin of the teachers' identities was analysed. In the study two methods were employed to identify teachers' identities. The first indicator used was the classification and framing practices of teachers that were observed in the classroom. The second indicator was the ideologies, philosophies and social groups that teachers identify with and disclosed during the interviews. The link between pedagogic identity and philosophy of knowledge, ideology of knowledge and identification with social groups is shown in Figure 3.1. A retrospective identity is seen as based on an absolutist philosophy of knowledge, a purist ideology and may belong to either the old humanist or progressive educator social groups. De-centred identities while still based on an absolutist philosophy of knowledge are informed by utilitarian ideologies and may belong

to either the industrial trainer or technological pragmatist social groups. Prospective identities are seen as based on a fallibilist philosophy of knowledge, an ideology of social change and belong to the ‘public educator’ social group.

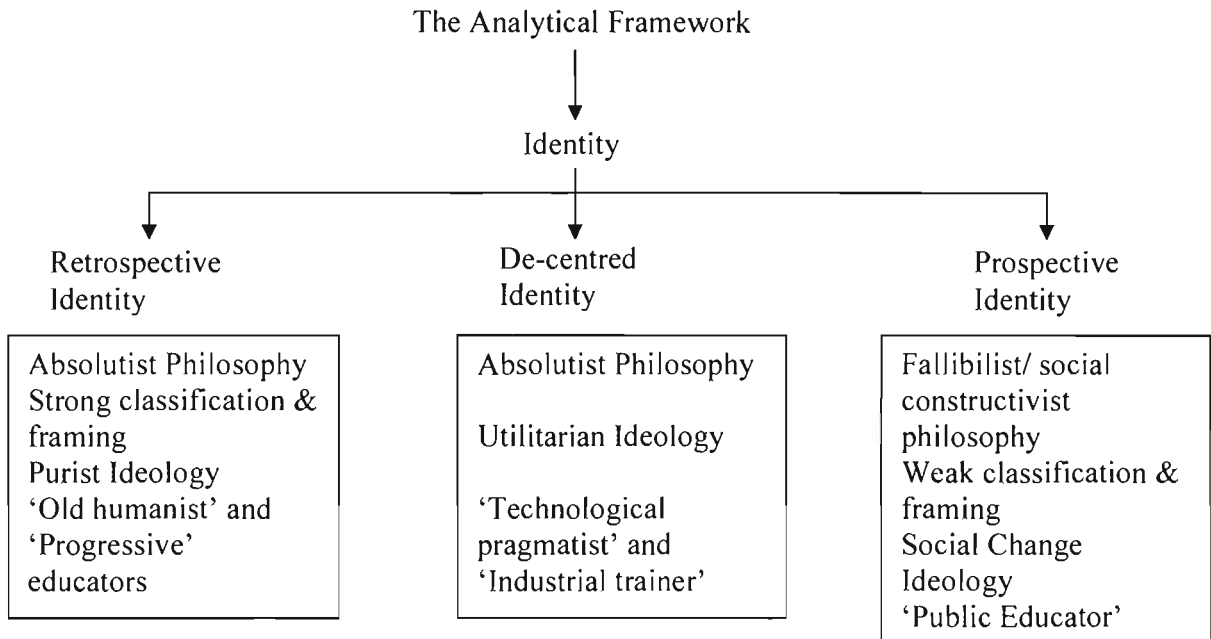


Figure 3.1: The Analytical Framework

3.7 Conclusion

The analytical framework that underpinned the study has been analysed in this chapter. The ten focusing concepts have been analysed and operationalised into empirical indicators. The link between the concepts and their elements to the research questions has been pointed out as well. In the next chapter the methodology and methods used in the study are discussed.

CHAPTER 4

METHODOLOGY AND METHODS

4.1 Introduction

Cohen *et al.* (2001) distinguish between methodology and methods. According to Kaplan (1973) methodology is a description and analysis of methods chosen, of their limitations and resources, of clarifying their presuppositions and consequences. In a nutshell, the aim of methodology is to explain and defend the methodological processes chosen. ‘Method’ refers to the range of approaches and techniques used to gather data to be the basis for description, inference, interpretation, explanation and prediction. This chapter consists of two sections. Section A outlines the methodological framework and Section B outlines the specific methods and instruments used in this project.

4.2 Methodology

There are three broad approaches to educational research. The first, based on the scientific paradigm, rests upon the creation of theoretical frameworks that can be tested by experimentation, replication and refinement. The second approach seeks to understand and interpret the world in terms of its actors and, consequently, may be described as interpretive and subjective. A third approach that takes into account the political and ideological contexts of much educational research is that of critical educational research. Aspects of interpretive and critical educational research inform my project.

Meighan (2001) groups sociological perspectives into three broad groupings: the macro perspectives, the micro perspectives and the interactionist perspectives. The interactionist perspectives are defined as being Janus-faced – they tend to look two ways, both at the patterns of society stressed by the macro sociologists and at the work and negotiations of individuals as stressed in micro perspectives (Meighan and

Siraj-Blatchford, 2003). Although my project intersects both interactionist and critical theory methodological paradigms it is rooted in the micro and tries to account for micro patterns in terms of macro socio-historical power relations thus making the interactionist perspective the most useful.

A qualitative research design was used. The aims and methods of qualitative research are justified by three main philosophies: interpretivism, hermeneutics and social constructivist philosophy. Before discussing the philosophical underpinnings of qualitative research methodology I outline in detail the principal aspects of qualitative research that informed this project. A definition of qualitative research:

Qualitative research is a situated activity that locates the observer in the world. It consists of a set of interpretive, material practices that make the world visible. These practices transform the world. They turn the world into a series of representations ...qualitative research involves an interpretive, naturalistic approach to the world. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them. (Denzin & Lincoln, 2000:3.)

Qualitative research was appealing for my project because I was interested in the actual curriculum taught in three contrasting socio-economic schools. Bryman (1988) lists the characteristics of qualitative research. Firstly, it is essentially concerned with looking at events, processes, values and actions from the perspective of those being studied; an important part of my research project was the perspectives of teachers and other educators involved in the Grade 9 curriculum. Secondly, it is concerned with describing and analysing the social settings in which those being studied are located as a means of holistically contextualising research results; the context of each school is seen as impacting on the practices of teachers and on the perspectives they hold. Thirdly, qualitative research involves the spending of enough time in settings in order to gain insights into social events and processes; the duration of the fieldwork in each school was at least three months. The fourth characteristic of qualitative research as favouring a relatively open-ended and less structured research strategy which allows for adjustments as the research field demands was ideal for my study of the diverse schools in the study.

Qualitative research is inherently multi-method in focus. The use of multiple methods or triangulation was an attempt to secure a valid and reliable in-depth understanding of the research problem.

4.2.1 Symbolic Interactionism

Symbolic interactionism has been relied on heavily. The micro level was partly informed by symbolic interactionism as expounded on by Blumer (1969) and Woods (1983). The notion of symbolic interactionism derives from the work of G. H. Mead (1934). Blumer (1969) explicated the three principles of symbolic interactionism:

Symbolic interactionism rests on three simple premises. The first premise is that human beings act toward things on the basis of meanings that the things have for them. The second premise is that the meanings of such things is derived from, or arises out of, the social interaction that one has with one's fellows. The third premise is that these meanings are handled in, and modified through, an interpretive process used by the person in dealing with the things he encounters. (Blumer, 1969:2.)

In agreement with Blumer, Woods (1979) identified three basic postulates of symbolic interactionism: human beings act towards things on the basis of the meanings they have for them, this attribution of meaning to objects through symbols is a continuous process and this process takes place in a social context.

These principles underpinned my research project. Firstly, the meanings or sense that teachers have made of the new curriculum were aimed at. Secondly, the meanings are influenced by symbols and the process of negotiation by which meanings are continually being constructed, and thirdly, the social context in which they occur is seen as impacting on the sense being made.

Meaning is foregrounded as the key element of human action. This is contrary to Watsonian behaviourism that posits a quasi-instinctive notion of human action in response to external stimuli. The meanings are, therefore, shared meanings on the basis of which people are able to communicate and to act jointly towards commonly perceived objects. Charon (1979) highlighted the notion of 'shared culture' within symbolic interactionism:

Symbolic communication with each other is the basis of our socialisation, which brings about a shared culture, which allows for understanding each other's acts (*idem*:55).

The symbolic interactionist approach was seen as useful for this project because it emphasises: individuals as constructors of their own actions; the world of subjective meanings of teachers, pupils, etc.; the process of negotiation by means of which meanings are continually being constructed; and the social context in which they occur.

Of the five focussing concepts outlined by Woods (1983) – namely, contexts, perspectives, cultures, strategies, negotiation and careers; the two that were employed in this study are contexts and perspectives. School contexts and situations were seen as having an impact on action - both constraining and enabling. Perspectives refer to frameworks through which sense is made in defining the situation.

4.2.2 Justifying Qualitative Research

Three philosophies explain the aims and methods of qualitative inquiry:

- Interpretivism
- Hermeneutics
- Social Constructivism

(Denzin and Lincoln, 2000.)

Interpretive understanding involves empathic identification, phenomenological inquiry and linguistic analysis. While understanding meaning is the central common aim of all three types of interpretivists, interpretivism differs from hermeneutics and social constructivism on the role of the researcher in the understanding of meaning and in the impact of socio-historical and structural factors on the meaning-making process.

Dilthey argued that to understand the meaning of human action requires grasping the subjective consciousness or intent of the actor, and from the inside. An 'empathic identification' with the actor is required. It is an act of psychological re-enactment – getting inside the head of an actor to understand what he or she is up to in terms of motives, beliefs, desires, thoughts, and so on. The general idea is that it is possible for the interpreter to transcend or break out of one's historical circumstances in order to reproduce the meaning or intention of the actor. Geertz (1979) argues that understanding comes from the act of looking over the shoulders of actors and trying to figure out (both by observing and conversing) what the participants think they are up to. The idea of acquiring an 'inside' understanding is a powerful central concept for understanding the purpose of qualitative inquiry.

Phenomenological inquiry is concerned with understanding how the everyday, intersubjective world is constituted. The aim is to grasp how we come to interpret our own and others action as meaningful. The third type of interpretive understanding involves the analysis of language. All three forms view human action as meaningful, show respect for and fidelity to the life world (ethical commitment) and emphasise the contribution of human subjectivity or intention without sacrificing the objectivity of knowledge.

Interpretivists argue that it is possible to understand the subjective meaning of action (grasping the actors beliefs, desires, and so on) yet do so in an objective manner. The meaning that the interpreter reproduces is considered the original meaning of the action. 'Method' allows interpreters to step outside their historical frames of reference. 'Method' correctly employed is a means that enables interpreters to claim a purely theoretical attitude as observers. The theoretical attitude is one of 'disinterested observer' this even when as a methodological requirement the inquirer may have to participate in the life world of others.

Interpretivism considers understanding to be an intellectual process whereby a knower (the inquirer) gains knowledge about an object (the meaning of human action). According to Bernstein (1983) no essential reference is made to the interpreter, to the individual who is engaged in the process of understanding and questioning. The

interpreter objectifies that which is to be interpreted and remains unaffected by and external to the interpretive process.

4.2.3 Philosophical Hermeneutics

Interpretive philosophy defines the role of the interpreter on the model of the exegete. Both the phenomenological observer and the linguistic analyst generally claim the role of uninvolved observer. Philosophical hermeneutics rejects the interpretivist view on three bases.

- Philosophical hermeneutics argues that understanding is not a procedure or a rule governed undertaking, rather it is the very basis of being human. Understanding is interpretation. It is not an isolated activity of human beings but a basic structure of our experience of life.
- It is not possible for the interpreter to get outside socio-historically inherited bias or prejudice. According to Gallagher (1992) tradition is a living force that enters into all understanding and conditions interpretation. Reaching an understanding requires the engagement of one's biases. Thus to examine our historically inherited prejudices and alter those that disable our efforts to understand others is an aim.
- Only in a dialogical encounter can we open ourselves to risking and testing our preconceptions and prejudices. Understanding is participative, conversational and dialogic. It is bound up with language and is achieved only through a logic of question and answer. Understanding is produced in the dialogue, not reproduced by the interpreter through analysis.

Philosophical hermeneutics has a non-objectivist view of meaning. It is not out there. It is more like engaging in a dialogue. Meaning is negotiated in the act of dialogue and not discovered. Philosophical hermeneutics opposes a naïve realism or objectivism with respect to meaning and endorses the conclusion that there is never a finally correct interpretation. Some constructivists hold this view but philosophical hermeneutics sees meaning as not necessarily constructed but as negotiated. The constructivist paradigm assumes a relativist ontology (there are multiple realities), a

subjectivist epistemology (knower and respondent co-create understandings), and a naturalistic (in the natural world) set of methodological procedures.

On the question of the impact of the social context on action Blumer holds:

From the standpoint of symbolic interactionism, social organization is a framework inside of which acting units develop their actions. Structural features, such as 'culture', 'social systems', 'social stratification' or 'social roles' set conditions for their action but do not determine their action ... Social organization enters into action only to the extent to which it supplies fixed sets of symbols which people use in interpreting their situations. (Blumer, 1969:87.)

However, the weakness of interactionist and interpretive approaches is their neglect of the power of external or structural forces to shape meanings and contexts. Thompson (1990) points out a key weakness of symbolic conceptions of culture as the downplaying of the impact of the social-historical context in constraining or enabling meanings and actions. Thompson's notion of the 'structural' conception of culture is:

The study of symbolic forms – that is, meaningful actions, objects and expressions of various kinds – in relation to the historically specific and socially structured contexts and processes within which, and by which, these symbolic forms are produced, transmitted and received. Cultural phenomena, on this account, are to be seen as symbolic forms in structured contexts. (Thompson, 1990:136.)

Rex (1974) points out a weakness of newer qualitative approaches that take meanings of participants as the objective perspective:

Whilst patterns of social reactions and institutions may be the product of the actors' definitions of the situations, there is also the possibility that those actors might be falsely conscious and that sociologists have an obligation to seek an objective perspective which is not necessarily that of any of the participating actors at all. We need not be confined purely and simply to the ... social reality that is made available to us by participant actors themselves. (Rex, 1974.)

The one criticism of symbolic interactionism is that it does not give sufficient attention to how meanings might be based on 'faulty, or incorrect, understandings'

(Denzin, 1989:11). Bernstein (1974) was also sceptical of the tendency to focus on participant's meanings:

And what of the insistence of the interpretive methodologies on the use of verbal accounts to get at the meaning of events, rules and intentions? Are there not dangers? Subjective reports are sometimes incomplete and they're sometimes misleading. (Bernstein, 1974.)

To critical theorists knowers are not portrayed as separate from objective reality, but may be cast as unaware actors in such historical realities (false consciousness) or aware of historical forms of oppression, but unable or unwilling, because of conflict, to act on those historical forms to alter specific conditions in this historical moment, (divided consciousness).

Critical educational research regards macro and micro perspectives as incomplete accounts due to their neglect of the political and ideological contexts (Cohen, 2001). Critical theory identifies the 'false' or 'fragmented' consciousness (Eagleton, 1991) that has brought an individual or social group to relative powerlessness, or indeed, power and it questions the legitimacy of this.

Habermas constructs the definition of worthwhile knowledge and mode of understanding around three cognitive interests:

- Technical
- Practical
- Emancipatory

My project intersects practical and emancipatory interests. Critical theory has its own research agenda and its own methodology – ideology critique and action research. The first two stages of ideology critique suggested by Habermas (1972:230) were employed:

- Stage 1 a description and interpretation of the existing situation – a hermeneutic exercise that identifies and attempts to make sense of the current situation.

- Stage 2 an exposition of the reasons that brought the existing situation to the form that it takes – the causes and purposes of a situation and an evaluation of their legitimacy, involving an analysis of interests and ideologies at work in a situation, their power and legitimacy (both in micro and macro-sociological terms).
- Stage 3 involves taking action.
- Stage 4 that involves reflection and review of the action is beyond the scope of this project.

In terms of justifying the use of critical theory in curriculum research Mouton (2001) argues that the impact of critical theory on curriculum research has been far-reaching. One of the assumptions underpinning this study is that the actual curriculum of the three schools was to a large extent a function of the historically and socially structured contexts of the three schools. Thus the socio-historical and current context of the schools is described in detail.

4.2.4 The Epistemic Ideal

Research is driven by the epistemic ideal or the search for ‘true’ knowledge - knowledge that is well substantiated (as opposed to opinion) and hence provides us with an accurate representation of reality. Mouton (1996) argues that ‘the search for truth is an elusive ideal... it involves the pursuit of a goal that can never be realized’. Three kinds of constraints - sociological, methodological and ontological constraints prevent researchers from producing true knowledge. Although various factors make the epistemic ideal unattainable the researcher is morally bound to the pursuit of ‘truthful knowledge’. The purpose of research is to arrive at results that are as close to the truth, i.e. the most valid findings possible. In social research, the validity of research findings rather than truth is established. Producing valid findings is no mean feat either. A researcher should be aware of these constraints and act or make choices to purposefully and rationally decrease them as far as possible, otherwise the reliability of the data is questionable and this will make the validity of the findings questionable.

Sociological constraints are shortcomings that originate with the researcher. This might involve lack of knowledge about the object of the inquiry, lack of training in research processes, lack of experience in conducting research, strong prejudices (lack of objectivity) that might bias the interpretation of data and poor judgement about various decisions in the research process. I was very aware of this constraint and took steps to counter it. On the question of bias I have explained my own in the section above and have been careful not to let my own personal likes and dislikes cloud my view. Lack of training and experience in the research process undoubtedly had an effect but I got some training and experience in it during the process.

Ontological constraints are features of the 'objects of study'. The fact that human beings are the 'objects' of inquiry in social research creates problems that are not encountered in the physical sciences. Human beings normally react to the fact that they are being studied and investigated. The participants in social research are aware that they are being investigated and tend to react to this by adapting their behaviour. This phenomenon has been known as reactivity (Campbell, 1957). This reactivity manifests itself in a variety of forms – resistance to being interviewed or observed, supplying incorrect information as a result of apathy or wilfulness, modifying behaviour or information to create a better impression or deliberately misinforming the researcher. If reactivity is not controlled or minimized by the researcher then the data collected will not be reliable. I controlled reactivity by being within the research setting for three months, firstly doing observations and then the interviews.

The key validity criterion for data collection is reliability. This is the requirement that the application of a valid measuring instrument (observation schedule and descriptive matrix) will result in reliable data. Smith (1975) asks the question: will the same methods used by different researchers in the same context produce the same results? The objective of data collection is to produce reliable data. If the data is reliable then different researchers will produce the same data. Sources of error that result in unreliable data are due to researcher effects, participant effects (reactivity) and context effects. I controlled this by employing three forms of triangulation that is discussed later on.

Methodological constraints refer to the use of inappropriate methods and techniques that ignore the limitations of a particular approach or instrument. The study could have been done differently but I do think the methods and techniques used could stand up to critical scrutiny. The activity of being present in the classroom, observing and writing down notes must have been very disconcerting for the teachers. One of the teachers disclosed that she felt like she was being 'critted'. All I could do was show teachers what records I had made and explain that 'a crit' of the lesson was furthest from the goal of finding out what teachers were teaching.

So while the attainment of the epistemic ideal is the overriding goal of social research, in real, concrete research we have to be satisfied with more truthful accounts rather than the truth. In the sections that follow the methods are discussed in detail.

4.3 Methods Of Data Collection

Qualitative research involves the collection and study of a variety of empirical materials – case study, personal experience, life story, interview, observational, interactional and visual texts – that describe routine and problematic moments and meanings in individual lives. As a qualitative researcher I therefore deployed a wide range of interconnected interpretive practices hoping to get a better understanding of the subject matter at hand.

The four implications, listed by Denzin (1970), of symbolic interactionism for the sociologist: firstly, the need to take a close look at the various symbols used in interactions, and the settings in which interactions take place; secondly, studying phenomena from the point of view of those being studied; thirdly, the need for the researcher to link the perceptions and symbols of the persons being studied with the 'social circles and relationships' that furnish perceptions and symbols and fourthly; researchers need to record the dynamics of the situations which they observe could best be achieved using case study methodology on the whole and supplemented by four main means of data collection: observations, post-observation interviews, questionnaire and collection of documents.

4.3.1 The Case Study

In each case a key method was non-participant observation of teacher's classroom practices followed by semi-structured interviews. An open-ended questionnaire was used to obtain professional, biographical details. The table below summarises the data collection process:

Table 4.1 Data collection methods

Schools	Independent	Ex-Model C	Ex-DET	Total
No. of lessons observed	43	55	34	132
Number of teachers observed	16	22	9	47
Post-observation interview	13	18	9	40
Questionnaires completed	10	8	8	26

The case study approach to educational research has been used. Three diverse socio-economic status schools were selected as cases in which all the grade nine teachers formed the unit of analysis. Case studies enable in-depth probing and intensive analysis of the multifarious phenomena that constitute the life of the unit aimed at understanding the unit (Cohen and Manion, 1992).

Cohen and Manion (1992) argue that the paradigm most naturally suited to case study research, is the interpretive paradigm with its emphasis on interpretation and subjective dimensions. A case study is 'a specific instance that is frequently designed to illustrate a more general principal' (Nisbet and Watt, 1984:72). It is 'the study of an instance in action' (Adelman *et al.*, 1980). The case study provides a unique example of real people in real situations, enabling readers to understand ideas more clearly than simply by presenting them with abstract theories or principles. (Cohen and Manion, 1992:181). Sturman (1999) argues that human systems have a wholeness or integrity to them that are maintained in case studies. Case studies report

the complex dynamic and unfolding interactions of events, human relationships in a unique context. Hitchcock and Hughes (1995) describe the hallmark of case studies as:

- Rich and vivid description of events relevant to the case
- Chronological narrative of events relevant to the case
- Description of events with the analysis of them
- Focuses on individual actors or groups of actors, and seeks to understand the perceptions of events
- Highlights specific events that are relevant to the case
- Integrally involvement of the researcher in the case
- Portraying the richness of the case in writing up the report

These characteristics of case studies made it an appropriate technique to use.

Case studies portray, 'what it is like' to be in a particular situation, to catch the close-up reality and 'thick description' (Geertz, 1973) of peoples lived experiences, thoughts about and feelings for, a situation. Hence it is important for events and situations to be allowed to speak for themselves rather than to be largely interpreted, evaluated or judged by the researcher. Nisbet and Watt (1984) counsel case study researchers to avoid journalism or reporting striking or sensational features; selective reporting in the interest of supporting a particular conclusion; an anecdotal style or low level, banal, tedious illustrations that take over from in-depth rigorous analysis; pomposity or trying to derive theory; and using high-sounding verbiage; and blandness or unquestioningly accepting respondent's views. This advice was taken and applied in this research study.

Generalisation can take various forms: from the single case to the class of cases that it represents (for example, an independent girls school might be representative of other similar schools); from features of the single case to a multiplicity of classes with the same features; and from single features of part of the case to the whole of that case (for example, the grade nine curriculum practices might be representative of the curriculum practices of the whole school). In this research, generalisation to other

similar cases was not the main reason for the investigation: the main reason was investigating the actual curriculum at micro level and explaining it in terms of macro level factors. As far as generalisation goes similar school contexts as the cases studied could have similar practices.

Case studies have been criticised severely. According to Smith (1991) the case study method ...is the logically weakest method of knowing and the study of individual careers, communities, nations, and so on has become essentially passé.

Demonstrating reliability and validity is problematic in case study methods because of the uniqueness of the cases. Nisbet and Watts (1984) point out a weakness of case studies as not easily open to cross-checking, hence they may be selective, biased, personal and subjective and they are prone to problems of observer bias, despite attempts to address reflexivity. These shortcomings of case studies have been addressed by building in three types of triangulation in the design process. Three of the four basic types of triangulation identified by Denzin (1978) have been utilised. Firstly, data triangulation that refers to the use of a variety of data sources in a study has been done. Observation data, interview data, questionnaire data and documentary data gathered. Secondly, investigator triangulation: the use of several different researchers has been employed to a much greater extent. My supervisor participated in the classroom observations, interviews and in interpretation of observation data to a greater extent than normally happens. Thirdly, theory triangulation refers to the use of multiple perspectives to interpret a single set of data has been done as an eclectic theoretical approach has been used. Fourthly, methodological triangulation that refers to the use of multiple methodologies as in both quantitative and qualitative methodologies to study a single problem were beyond the scope of this project.

4.3.2 Observation

A key method was participant and non-participant observation. It involved taking part in the ordinary everyday life of the school as a researcher. Burke and Franzoi (1988) suggest that there is a strong relationship between people's identities and the situations they are in. Franzoi (1988) asserts that understanding identities removed from the situations and persons that normally invoke these identities runs counter to

the main tenet of symbolic interactionism that behaviour can only be understood within a particular situational context. Burke and Reitzes (1981) concluded that all three components – identity, situation and behaviour are closely related.

Observation is a key method used in case studies. The purpose of such observation is to establish generalisations about the wider population to which that unit belongs. There is a range of studies that used case study methodology (Acker, 1990; Boulton, 1992; Cohen: 1990; Houghton: 1991). Observation may be of participant and non-participant type. Bailey (1978) identified the advantages of the participant observation approach: because case study observations take place over an extended period of time; researchers can develop more intimate and informal relationships with those they are observing, generally in more natural environments than those in which experiments and surveys are conducted. Case study observations are less reactive than other types of data-gathering methods because of the extended and prolonged engagement of the researcher in the case. Woods (1987) cautioned on the problem of ‘going native’ that could happen unless the researcher is aware of it.

Observation for research purposes is deliberate, systematic, question-specific observation. The purpose of the observation guides the observation. Karl Popper described observation as:

Observation is always selective. It needs a chosen object, a definite task, an interest, a point of view, and a problem. And its description presupposes a descriptive language, with property words; it presupposes similarity and classification, which in its turn presupposes interest, points of view, and problems. (Popper 1963: 183)

Observation of many lessons enabled ‘live’ data to be collected from ‘live’ situations. Morrison (1993) argues that observation enables the collection of data on the physical setting, the human setting, the interactional setting and the programme setting. Of the three types of observation – highly structured, semi-structured and unstructured – the semi-structured observation was used most. The semi-structured observation will have an agenda of issues but will gather data to illuminate these issues in a far less pre-determined or systematic manner than the structured observation. This allowed me to experience, observe and record the lessons as they progressed, to describe the

phenomenological complexity of participants interactions, to be open to whatever was most important in that time even though it was not part of the issues being investigated. For example, at the ex-Model C school lessons were frequently disrupted by inappropriate pupil talk and activity – these were recorded as well. I made detailed notes according to the teacher’s agenda and was honest to the situation. Transcripts of lessons observed are provided in the Appendix. To reduce reactivity of participants I shadowed the class for two weeks at least and for up to a month in the ex-Model C school.

Morrison argues that by being ‘immersed in a particular context over time not only will the salient features of the situation emerge and present themselves but a more holistic view will be gathered of the interrelationships of factors’ (1993:88). Field notes that were made comprised quick, fragmentary jottings of key words/symbols, more detailed observations written out fully and description of the physical setting. The lesson was later typed out in full into a comprehensive account by using the field notes made and the learner support materials collected. In most cases I was able to reconstruct very detailed accounts as the transcripts in Appendix A show. Learner support materials collected are included in Appendix E.

In terms of how many lessons to be observed I stopped when ‘theoretical saturation’ (Adler and Adler, 1994) had been reached, when nothing new was being observed and when data began to be repeated. Generally, at least three lessons per teacher seemed to be sufficient to get an idea of the classification and framing practices of the teacher, although the maximum number of lessons observed in higher status subjects went up to six because these had more lessons allocated to them in the time-table.

Gold (1958) offered a well-known classification of researcher roles in observation – complete participant, participant-as-observer, observer-as-participant and complete observer. The move is from complete participation to complete detachment. My role tended towards observer as participant and non-participant observation. There was minimum deliberate intervention on my part. I wanted to observe the situation as naturally occurring as possible. For each lesson I entered with the pupils, greeted the teacher and asked for permission to observe. I always sat at the back of the classroom

so as to be least intrusive. All teachers were generally very welcoming in the first few lessons and although they did not say it, I sensed some uneasiness towards the end.

4.3.2.1 Observation As A Means Of Representing Reality

Any tool used or approach to observation of an event provides only one representation or view of the phenomena under study. Weinstein (1983) points to the value of diversity, Mead (1975) argued that an anthropologist's aim is to obtain a grammar not the grammar of people or an event. Observations are descriptive statements about natural phenomena that are 'directly' accessible to the senses and about which several observers can reach consensus with relative ease. In my study there were two sources of data that were 'directly' accessible to the senses. One was the observation of lessons and the other was listening to teachers explain their selection and pedagogy in interviews. I observed 132 lessons across the subjects or learning areas. The table indicates the number of lessons and teachers observed.

Table 4.2 Number of lessons and teachers observed

School Subject	Independent		Former Model C		Former Black	
	No. of lessons	No. of teachers	No. of lessons	No. of teachers	No. of lessons	No. of teachers
Mathematics/MLMMS	5	1	7	4	5	1
English	4	1	12	4	2	1
Zulu	2	1	2	1	1	1
Afrikaans	2	1	3	1		
Biology	3	1				
Science/NS	4	1	7	3	5	1
History/ HSS	3	1	7	2	4	1
Geography	4	1	3	1		
Accounting/EMS	3	1	2	1	5	1
Technology	2	1			4	1
Art/AC	2	1	2	1	4	1
Drama	2	1	2	1		
Home Economics	2	1	2	1		
PE	2	1				
Integrated program	3	2				
Computer Literacy			3	1		
Media			1	1		
LO			2	1	4	1
Total	43	16	55	22 (Same teacher for LO & HE)	34	9

4.3.3 Post-Observation Interviews

The research interview has been defined as ‘a two-person conversation initiated by the interviewer for the specific purpose of obtaining research-relevant information, and focused by him on content specified by research objectives of systematic description, prediction or explanation’ (Cannell and Kahn, 1968:527). The interviews conducted, involved the gathering of data through direct verbal interaction between individuals. I did post-observation interviews as the main way of gathering information to get an understanding of teachers’ explanations of what they did in the classroom. As Tuckman (1972) describes it, the interview makes it possible to measure what a person knows (knowledge or information), what a person likes or dislikes (values and preferences) and what a person thinks (attitudes and beliefs).

I use the interview in conjunction with two other methods – observation and questionnaires. With reference to the ‘insider’ view Blumer (1969) writes that the researcher has to obtain data ‘in the form of descriptive accounts’ from the actors of their understandings of the social world. The use of interviews was underpinned by the view that knowledge is generated between humans, often through conversations (Kvale, 1996:11). The centrality of human interaction for knowledge production is foregrounded in interviews and it emphasises the social situatedness of research data. The interviews conducted allowed discussion of a topic of mutual interest and concern. Kitwoods (cited in Cohen *et al*, 2000) three conceptions of the interview: interview as pure information transfer and collection; as a transaction that inevitably has bias that has to be recognised and controlled; and the interview as an encounter necessarily sharing many of the features of everyday life. My intention was more aligned with the second conception with the understanding that the attempt of being systematic and objective, within the constraints of everyday life were a part of the interviews. Just one teacher at the ex-DET school who was embroiled in a dispute with the schools administration refused on the ground that he is not complying with school policy. Every other teacher approached willingly agreed to the interview. I observed this teacher twice and realised from the incoherent lessons that much more was the issue than just the schools administration. The teacher could not be open and welcoming when he was not engaged in teaching his subject LLC at all but rather in minding the students during the lesson or even teaching common-sense values to students. (Kitwoods, cited in Cohen *et al*, 2000:267.)

Cicourel (1964) lists five unavoidable features of the interview situation. Firstly, there are many factors that inevitably differ from one interview to another, such as mutual trust, social distance and interviewer’s control. I established mutual trust by engaging in conversations with teachers during the first two weeks before the interview. I tried to reduce the social distance in terms of race, class and gender between myself and the interviewees by focussing on the common professional interests we shared. In situations where I felt threatened due to racial distance my supervisor’s presence provided the credibility needed by participants and myself.

Secondly, Cicourel points out that the respondent may well feel uneasy and adopt avoidance tactics if the questioning is too deep. I did not get any sense of this

probably because the topic was fairly neutral and not controversial nor sensitive to participants. At the beginning of the interview I spent a few minutes on talking about how the interviewee felt about my being in their classrooms. An elaborate introduction was unnecessary as the teachers and I had become quite acquainted during the observation of their lessons.

Thirdly, both interviewer and respondent are bound to hold back part of what it is in their power to state. On the contrary I found participants really enjoyed talking about the topic – some because they wanted to ‘let off steam’ about their perceived intransigence of the education department and others found it intellectually stimulating. I certainly did. The mathematics HOD from the independent school was reticent at the beginning saying that she only had half an hour – after one and a half hours of sharing views I asked her how she felt about the interview in the light of her initial reticence – she said that she found the session quite intellectually stimulating and offered to speak to me in the future again if needed. This became a common trend – many interviewees offered their time if needed in the future. The deputy principal of the ex-Model C school gave a lucid account of his views and strategies the school employed and offered an open line of communication. My experience of the interviews was more a positive experience as found by Kvale (1996) most were a rare and enriching experience for both myself and the interviewee, who also obtained new insights into their views.

Fourthly, many of the meanings, which are clear to one, will be relatively opaque to the other, even when the intention is genuine communication. Before the interview I thought the same as well as did fellow PhD students who said that the likely response to the first question ‘what are your thoughts about integrating the subjects?’ would be ‘what does that mean?’ Most teachers were able to present lucid accounts of their views about integration, of their classroom practices, their rejection or acceptance based on pedagogical or political reasons.

Fifthly, it is impossible, just as in everyday life, to bring every aspect of the encounter within rational control. Fortunately all the interviews went more according to the plan.

In terms of Kvale's (1996) ideal interview I was able to meet most of the 'quality criteria' for most of the interviews. The first criteria: the extent of spontaneous, rich, specific and relevant answers is illustrated in Kate's responses to the questions (see Appendix B). Her answers indicate that she was thinking very deeply about the issues, not only because of the questions being asked but because it was of personal significance to her and the whole idea of integration of knowledge was a common topic in the school and in the IEB circles. One can also see that her answers were very specific and relevant and using specialised terminology.

The second criteria of 'the shorter the interviewer's questions and the longer the subject's answers the better'. This is evident in the interview excerpt (Appendix A) also. To a great extent, the third criteria, following up and clarifying responses had been done. Of course, with hindsight this aspect could have been much better done. The fourth criteria, the interviewer attempts to verify his or her interpretations of the subject's answers in the course of the interview was better covered by my supervisor, who did this very expertly. Undoubtedly, the later interviews I did were of a higher quality than the earlier interviews. The fifth criteria, the interview is 'self-communicating' it is a story contained in itself that hardly requires much extra descriptions and explanations was evident in more than half the interviewees accounts. The interview transcript attached as Appendix C exemplifies the analytical responses of the interviewee. Many of the interviewees were able to present very reflexive, lucid, coherent analytical accounts that were a pleasure to listen to.

Table 4.3 The number of interviews done in each school

Subject/LA teachers	Number of teachers interviewed at the elite independent school	Number of teachers interviewed at the ex-Model C school	Number of teachers interviewed at the ex-DET school
Mathematics	1	1	1
English	1	3	
Afrikaans		1	
Biology	1		
Science/NS	1	3	1
History/HSS	1	2	1
Geography	1	1	
Accounting/EMS	1	1	1
Technology	1		1
Integrated program	2		
Drama/AC		1	1
Art		1	
Media		1	
LO			1
Sub total	10	15	7
Management teachers			
Principal	1		
Deputy Principal (academic portfolio)		1	
Grade 9 Head Teacher	1	1	
Head of Department	1 (Maths)	1	1
OBE coordinator			1
Sub Total	3	3	2
Total	13	18	9

4.3.3.1 Recording The Interview

I used an audiotape recorder to record each interview. In the cases where two interviewees did the interviewing I also wrote brief notes wherever possible. The trade-off was the need to catch as much data as possible and to listen attentively to the interviewee so as to be able to probe their responses. The audiotape was not the best method but it did assist in the interview process – I was able to engage fully with the interviewee because I did not have to frantically write everything down. I am sure

this would have been most disconcerting to the interviewee to wait while I wrote after a response from them.

4.3.3.2 Transcribing The Interviews

I transcribed each interview myself. This greatly assisted in me getting to know each teacher better and facilitated the analysis greatly.

4.3.4 Questionnaires

Questionnaires were used to gather professional biographical data focused on teachers' career trajectories. A copy of the questionnaire is attached as Appendix C. Denzin (1983) suggests the use of biography as a method of studying the social-historical aspects of research participants. Interpretive interactionism attempts to study biographies as these articulate a particular historical moment in the life world (*idem*:130).

Persons personalise structures by bringing their own unique biographies and interpretive practices to bear on the task, event, or interaction at hand. Such structures are uniquely personal ways of being and doing a particular pattern or form of interaction. (Denzin, 1983:141.)

All 10 teachers at the independent school willingly completed their questionnaires, which was distributed and collected from the teachers by one of the schools secretaries. At the ex-Model C schoolteachers also completed their questionnaires willingly but had to be reminded of them several times. At the ex-DET school I experienced difficulty in getting the questionnaires back and some teachers had not handed theirs in even by the last day of the fieldwork. I had to revisit the school and take new questionnaires to three teachers.

4.3.5 Documents

Documents such as learner support materials, tests and examination papers, timetables, assessment formats were collected. Examples of Learner Support Materials used in the elite and ex-Model C school are attached as Appendix E.

4.3.5.1 Sample

In selecting cases Yin advises: 'each case must be carefully selected so that it either (a) predicts similar results (a literal replication) or (b) produces contrasting results but for predictable reasons (a theoretical replication) (1994:46). The three cases I studied were a theoretical replication – contrasting results were expected for predictable reasons.

Gaining access to the schools was quite easy. I made an appointment with the principal of the independent school and met her and was interviewed by her about my research. This first meeting was very informative about the school's curricular practices. The principal discussed the research with her teachers who were willing to participate in the study. One of the teachers at the independent school referred me to the ex-Model C school at which she had taught the previous year and where according to her integration of knowledge was being done. I knew an HOD at the school who spoke to the principal and the deputy principal who willingly gave me access to the school. With regard to the ex-DET school, a lecturer from the university who had done research at the school accompanied me to the school, introduced me to the principal and facilitated access greatly. At the ex-DET school the principal made it clear that he expected some 'pay-back' in the form of assisting the school in some way, that I did by teaching the Grade 12 Geography class map skills and assisting the teacher with resources.

4.3.5.2 Instruments

Data was gathered using the following means:

- 1) Semi-structured observation schedule, writing detailed notes as each lesson unfolded, and collection of LSMs used in each lesson.
- 2) Experiencing the whole curriculum with the pupils over two weeks.
- 3) Semi-structured interview schedule to obtain teacher's attitudes to knowledge and rationale for their practice.
- 4) An open-ended questionnaire obtaining biographic professional details.

4.4 Analytical Framework

The three phases of the depth hermeneutical approach social-historical analysis, formal or discursive analysis and interpretation/reinterpretation (Thompson, 1990:281) informed data collection and analysis. The notion of depth hermeneutics is based in the understanding that 'the object of our investigations is itself a pre-interpreted domain' (*idem*:275). Thompson uses the notion of 'doxa' to refer to participants' everyday understandings and beliefs. Depth hermeneutical analysis goes beyond the interpretation of doxa and moves into a re-interpretation based on both socio-historical and formal discursive analysis for explaining the current situation. The purpose of the first phase of the depth-hermeneutical approach is:

To reconstruct the socio-historical condition and contexts of the production, circulation and reception of symbolic forms, to examine the rules and conventions, the social relations and institutions, and the distribution of power, resources and opportunities by virtue of which these contexts form differentiated and socially structured fields. (Thompson, 1990:284.)

Thompson (1990) describes the second form of analysis as a type of formal or discursive analysis, which is concerned, primarily with the internal organization of symbolic forms, with their structural features, patterns and relations. Thompson mentions semiotic, conversation, syntactic, narrative and argumentative analyses as examples of discursive analysis.

The third phase of analysis, interpretation/re-interpretation is defined as:

The phase of interpretation is facilitated by, but distinct from, the methods of formal or discursive analysis. The latter methods proceed by analysis: they break down, divide up, deconstruct, seek to unveil patterns and devices that

constitute, and operate within, a symbolic or discursive form. Interpretation builds upon this analysis, as well as upon the results of socio-historical analysis. But interpretation involves a new movement of thought: it proceeds by synthesis, by creative construction of possible meaning. This movement of thought is a necessary adjunct to formal or discursive analysis. (Thompson, 1990:289.)

Each case is analysed according to the three phases of depth hermeneutics. The first section of each case operates largely at the level of social-historical analysis where each school context is described in terms of temporal characteristics, geographical parameters, economic status, human and material resources. The second section operates largely at the formal/discursive level where 'breaking down' is done. The curriculum of each school is analysed according to curriculum structure, knowledge and competence taught; and teachers' perspectives on the curriculum they teach is analysed. The third section operates along the lines of interpretation/re-interpretation in which an explanation of the curriculum practices at the three schools, based on the socio-historical and formal-discursive analysis, is done.

This chapter outlined the methodology and methods informing the study. The next chapter presents an analysis of the official curriculum, C2005, which was intended to guide curriculum practices in schools.

CHAPTER 5

THE OFFICIAL CURRICULUM

5.1 Introduction

The aim in this section is to outline what the official curriculum policy, Curriculum 2005 (C2005) for the senior phase (DoE, 1997) advocated in terms of curriculum, pedagogy and assessment. Radical changes are advocated by the official curriculum in each of these facets that together amount to a paradigm shift. In this chapter, the curriculum document is analysed – neither the learning programmes that have been developed nor the practices of teachers in classrooms are commented on.

During the time of the fieldwork in the three schools, C2005 was the official curriculum policy. South Africa has developed a new National Curriculum Statement (NCS) based on a review of C2005 (Chisholm *et al*, 2000). This said, the underlying principles of C2005 discussed in this study remain central guiding principals informing the process of curriculum reform.

I take an eclectic theoretical approach in analysing both the intended and actual curriculum. The concepts of educational code (Bernstein, 1971), diversity of knowledges (Bernstein, 2000), ideological traditions in the history of the school subject (Goodson, 1987), and philosophies of knowledge (Ernest, 1999; Peters, 1972) are used to frame the analysis. These theories have been explained in detail in Chapter 2.

All learning areas are analysed because the aim is to understand the integration of the curriculum as a complex whole. Other analyses that focus on one LA such as Mathematics (Graven, 2000), Science (Ramsuran, 2004) and the studies reported by Taylor and Vinjevold (1999), do not analyse the whole curriculum but single subjects only. In this analysis the LAs are viewed as pieces in a complex mosaic that

emphasise different forms of knowledges for different purposes that together make up a complex whole.

This chapter has four sections. In the first section the official curriculum is analysed according to Bernstein's concept of integrated knowledge code. In the second section the specific outcomes (SOs), rationale and assessment criteria (ACs) of the eight LA s advocated by C2005 is analysed and compared. In the third section the diverse forms of knowledge advocated by C2005 is discussed. In the fourth section a brief comparison of C2005 to international trends in curriculum restructuring in some economically developed countries is done.

5.2 C2005 And The Integrated Code

Various elements of integrated codes as theorised by Bernstein: transformation of power relations, a focus on equity, an ideology of social change, weaker classification of knowledge, weaker framing, greater focus on the use of knowledge in real life and a variety of modes of assessment as well as the inclusion of socio-affective criteria in addition to cognitive criteria indicate a shift to the integrated code in C2005. Aspects of C2005 that are different from the theory are also mentioned. This view is substantiated below.

5.2.1 Transformation Of Power Relations

The apartheid curriculum perpetuated race, class, gender and ethnic divisions. It was a traditional, strongly subject-based curriculum that was abstract and content laden, and that emphasized subject knowledge and skills (NDOE, 1997). The real world experiences of the majority of learners who lived in a society characterized by grossly unjust race, class and gender power relations were absent from the curriculum. The curriculum was, in the words of Maxine Greene (1971), 'an alien and alienating edifice' for the majority of students. In response, to traditional curriculum practices where knowledge that was transmitted and acquired in schools tended to be fragmented, abstract and inert (Adler *et al*, 1994), new curriculum policy in South Africa is underpinned by three principles: outcomes-based education, learner-centred

education and integrated knowledge (Chisholm, 2000). In addition to knowledge and understanding, skills, values and attitudes to be learned are also prescribed.

The outcome displayed by the learner at the end of the educational experience is the driving factor. The critical outcomes are broad, generic cross-curricular outcomes that underpin the constitution and are adopted by the South African Qualifications Authority (SAQA). The seven critical outcomes (COs) comprise of both complex cognitive competences and simple socio-affective competences. The COs 'identify and solve problems in which responses display that responsible decisions using creative and critical thinking have been made', 'use science and technology effectively and critically, showing responsibility towards the environment and health of others', 'communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation' and 'collect, analyse, organize and critically evaluate information' are examples of complex practical competences or 'knowing how to' based on complex foundational and cognitive competences or 'knowing that.' Simpler socio-affective critical outcomes are 'work effectively with others as members of a team, group, organization, community' and 'organize and manage oneself and one's activities responsibly and effectively'. The CO 'demonstrate an understanding of the world as a set of related systems by recognizing that problem-solving contexts do not exist in isolation' implicitly contains the idea of integration of knowledge for the purpose of problem solving in a global context. Five developmental outcomes that should 'contribute to full personal development ...and social and economic development at large' are also set (DoE, 1997:15).

The apartheid curriculum guidelines that provided grade specific definition of subject content have been replaced. In C2005 the senior phase is treated as a unit and curriculum guidelines are given for the entire phase made up of Grades 7, 8 and 9 and not for each grade specifically. Policy advocates that the learning content offered in this phase should 'be less contextualised, more abstract and more area specific, than in the previous two phases and that curriculum developers and teachers ensure that integration of subjects and of theory and practice still takes place'. The NCS (2002) on the basis of the review committees (2000) recommendation provides guidelines that are grade specific. The NCS is more specific on the issue of conceptual progression and integration: 'the achievement of an optimal relationship between

integration across LAs (where necessary and educationally sound) and conceptual progression from grade to grade, are central to this curriculum' (2002:2).

- The goals of teaching and learning have been reconceptualised to meet social, political and educational goals. General curriculum policy indicates changes in the conceptualisation of knowledge, teacher, pupil, and pedagogy. Thus:

Policy envisages a particular kind of teacher: All teachers and other educators are key contributors to the transformation of education in South Africa. 'The kind of learner that is envisaged is one who will be inspired by these values, and who will act in the interests of a society based on respect for democracy, equality, human dignity, life and social justice. (NCS, 2002:3.)

C2005 strongly sets the educational agenda as one of high-level cognitive competences and knowledge for the purpose of creating a better society. It advocates a high knowledge, high skill curriculum as the means to promoting social justice, equity and development. As such, it embraces a mix of progressive and radical competence modes of curriculum as outlined by Bernstein (1996). The progressive trend is strongly depicted in the high order learning goals, captured in the seven critical outcomes, that underpin all curricula that require learners to go beyond recall, recognition and reproduction of information and to critically evaluate, analyse, synthesize, produce and apply knowledge.

South Africa's first democratic government faced two huge challenges: to overturn the legacy of apartheid and to face up to the global competitiveness challenge. A compelling imperative for the first democratic government, in overturning the legacy of apartheid (a race, class and gender stratified society) was to restructure the curriculum to reflect the values and principles of a democratic society. C2005 is based on the constitutional goals of democratisation, equity and social justice. It takes as its starting point a clear political agenda and the need to transcend the curriculum of the past. Curriculum 2005 forcefully aims to overcome the stultifying legacy of apartheid education by intending a deeper knowledge, values and skills base for South Africa's citizens; these will in turn provide the conditions for greater social justice, equity and development.

The Senior Phase Policy Document (1997) also explicitly links the curriculum as instrumental in achieving the political goals of the state. The curriculum is foregrounded as ‘at the heart of the education and training system,’ and since ‘in the past the curriculum has perpetuated race, class, gender and ethnic divisions and has emphasized separateness, rather than common citizenship and nationhood’ it became ‘imperative that the curriculum be restructured to reflect the values and principles of our new democratic society’ (NDOE, 1997:3). C2005 is viewed as a key instrument in achieving the transformation of South African society. To achieve the political goals, C2005 advocates a high knowledge, high skills curriculum as the means to achieving social justice, equity and development.

A significant challenge for the first democratic government was addressing the inequality in the distribution of both human and material resources and in ensuring equitable access to high-level knowledge and skills to all. The official intention was that the state’s resources be used according to the principle of equity so that the state’s resources are used to provide ‘essentially the same quality of learning opportunities for all citizens’. Thus:

In view of the country's history and its legacy of inequality, it is important that the state's resources be deployed according to the principle of equity, so that they are used to provide essentially the same quality of learning opportunities for all citizens. The improvement of the quality of education and training services across the board is therefore essential. (NDOE, 1997:3.)

5.2.2 Weaker Classification In The Organisation Of Knowledge

In line with international trends, C2005 overturned the widespread traditional reliance on discipline-based subjects for the school curriculum and advocated a radical form of integrated knowledge. Fundamental and radical change to the organization of knowledge in the new school curriculum involved replacement of the traditional school subjects with integrated knowledge embodied in ‘learning areas’. While all three design features of C2005, outcomes-based education, learner-centred education and integrated knowledge, had potential to contribute to the attainment of equity, integrated knowledge was a key principle in this regard. Bernstein argues that one of the reasons for the institutionalising of integrated codes above the level of the primary

school is its 'less rigid social structure' that makes it a potential code for egalitarian education' (1971:67). Whereas UK policy documents are silent about whether knowledge for the curriculum in a 'knowledge society' is more of the 'old disciplinary knowledge or a new kind of trans-disciplinary knowledge that is more transient and local' (Moore & Young, 2001:445), South African curriculum policy explicitly advocates a radical form of integrated knowledge. Thus:

South Africa has embarked on transformational OBE. This involves the most radical form of an integrated curriculum. There are several different forms of integration. This most radical form implies that not only are we integrating across disciplines into Learning Areas but also we are integrating across all eight Learning Areas in all Educational activities. ... The outcome of this form of integration will be a profound transferability of knowledge in real life. (NDOE, 1997:32.)

Three levels of knowledge integration were advanced in the new curriculum: firstly, there was integration of subjects in eight Learning Areas (LAs) for the senior General Education and Training phase of schooling. For example, History and Geography were 'merged' into Human and Social Science; and Biology, physical Geography and General Science were 'merged' into Natural Science.

The second level of integration was integration across eight LAs. Each LA was to be studied under five themes or 'phase organizers' prescribed by policy. For integration purposes, five very broad Phase Organisers have been prescribed: Communication; Culture and Society (including citizenship); Environment; Economy and Development; and Personal Development and Empowerment. The phase organisers are the integrating principles that enable developers and users of Learning Programmes to design and use learning activities that integrate knowledge from all eight Learning Areas. The third level of integration was greater closeness with real life. The desired outcome of the two forms of radical integration, to be promoted by suitable learning activities, was 'a profound transferability of knowledge to real life' (NDOE, 1997:32).

Juxtaposing C2005 notion of integration with Bernstein's notion of integration indicates some interesting similarities and differences. Congruent with Bernstein's definition, the boundaries between the subjects have been blurred as they become part

of a LA which itself must be subordinated to a theme or phase organiser or in Bernstein's terminology a 'supra-content concept'. In contrast to Bernstein's definition, C2005 emphasises the 'transfer of knowledge to real life'. While Bernstein emphasizes conceptual rigour, general principles and a high level of abstraction in integration of knowledge, C2005 gives no guidelines on this aspect.

5.2.3 Weaker Framing Of Knowledge

In C2005 framing is weakened in all respects except the criteria of critical and specific outcomes (Harley and Parker, 1999). This is evident in the changing roles of teachers from deliverers of prescribed curricula to learning mediators who design and select learning materials, determine the sequence and pace of learning, use a variety of methods to assess learners, and make decisions based on democratic principles (NDE, 2000). Thus:

Teaching will become a far more creative and innovative career. No longer will teachers and trainers just implement curricula designed by an education department. They will be able to implement many of their own programmes as long as they produce the necessary outcomes. (NDOE, 1997:29.)

5.2.4 Integrated Assessment

C2005 assessment guidelines are congruent with Bernstein's theory on assessment in the integrated code. What competencies are to be assessed, how assessment is to be done and who assesses, has been reconceptualised. Assessment is defined as a series of tasks set in order to obtain information about a learner's competence. 'These tasks could be assessed in a variety of ways using different assessment techniques throughout the learning process' (1997:13). The assessment criteria analysed in detail later indicate that both cognitive and socio-affective competences should be assessed. Complex cognitive competences in LLC under SO 5 such as: 'use of adequate and correct vocabulary, adjectives, avoidance of clichés/ambiguity/verbosity as well as general sensitivity of language regarding gender/race/cultural issues' are to be assessed. Examples of a socio-affective competence to be assessed are 'when learners can interact pro-actively with a person or persons logically and sensitively until a conclusion is reached' and 'ways should be found to bridge communication

gaps/prevent breakdown' (LLC-15). Different modes of assessment such as summative and formative assessment are advocated. Continuous assessment that includes tests and examinations, learner portfolios and projects are advocated. Self and peer assessment are seen as valid.

5.3 The Learning Areas (LAs)

The eight learning areas that have been identified and the time allocation for each are: (LLC) Language, Literacy and Communication (20%); (HSS) Human and Social Sciences (10%); Technology (10%); (MLMMS) Mathematical Literacy, Mathematics and Mathematical Sciences (13%); (NS) Natural Sciences (12%); (AC) Arts and Culture (10%); (EMS) Economic and Management Sciences (10%) and (LO) Life Orientation (10%). The remaining 5% is flexi-time. In contrast with the theory that a key defining characteristic of an integrated code are 'a range of options' all eight LAs are compulsory for the school to offer and for pupils to study. This is in contrast to the integrated code that has extensive pupil choice.

Although Languages, Mathematics and Science enjoy higher status than the remaining five LAs, C2005 reduced the disparity in time allocations to traditional high status core and low status peripheral subjects. Figure 5.1 shows the much more flatter line showing reduced variations in the status of subjects. Five of the eight LAs are allocated 10% each. HSS that integrates whole disciplines like History and Geography is given the same 10% as a new LA like technology and LO. Core subjects like Mathematics and Science are allocated 13% and 12% respectively while peripheral subjects like LO and AC are allocated 10%. Table 5.4 shows the variance and standard deviation for policy. The standard deviation of policy of 1,06 and the variance of 1,1 indicates low deviation from the mean and low variance in time allocation to the different LAs.

Table 5.1 Variance And Standard Deviation

Official C2005			
Eight integrated LAs	Time %	D from Mean	D
LLC (L1)	10	0,5	0,25
(L2)	10	0,5	0,25
MLMMS	13	2,5	6,25
NS	12	1,5	2,25
HSS	10	0,5	0,25
LO	10	0,5	0,25
A&C	10	0,5	0,25
EMS	10	0,5	0,25
Technology	10	0,5	0,25
Flexitime	5		
Total	95		10,25
Mean	10,5		
Variance			1,1
SD			1,06

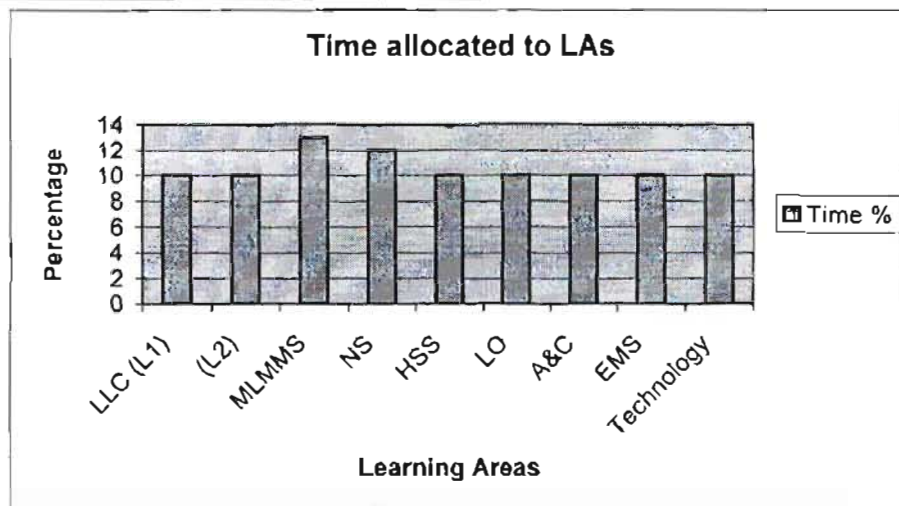


Figure 5.1 Time Allocated To LAs

5.3.1 Specific Outcomes (SOs)

The specific outcomes refer to what knowledge; skills, values and attitudes learners are expected to demonstrate at the end of a learning experience in each LA. Thus, ‘the focus ... is the link between intentions and results of learning, rather than the traditional approach of listing content’ (NDOE, 1997:2). In total there are sixty-six SOs.

A quantitative analysis of the 66 SOs showed, firstly, that there is a greater emphasis on academic outcomes than on utilitarian outcomes. Of the 66 specific outcomes 39 or 59% are aimed at achieving purely academic outcomes and 27 or 41% are aimed at achieving utilitarian outcomes. Secondly, the distribution of academic and utilitarian outcomes differs across the eight LAs. The academic outcomes dominate in LLC, HSS, MLMMS, technology and NS. The utilitarian outcomes are emphasised in EMS, AC and LO.

Table 5.2 Total academic and utilitarian outcomes per LA

L A	LLC	HSS	MLMMS	NS	EMS	AC	LO	Tecb.	Total	%
Intrinsic	5	7	9	7	4	3	0	4	39	59
Utilitarian	2	2	1	2	4	5	8	3	27	41
Total	7	9	10	9	8	8	8	7	66	100

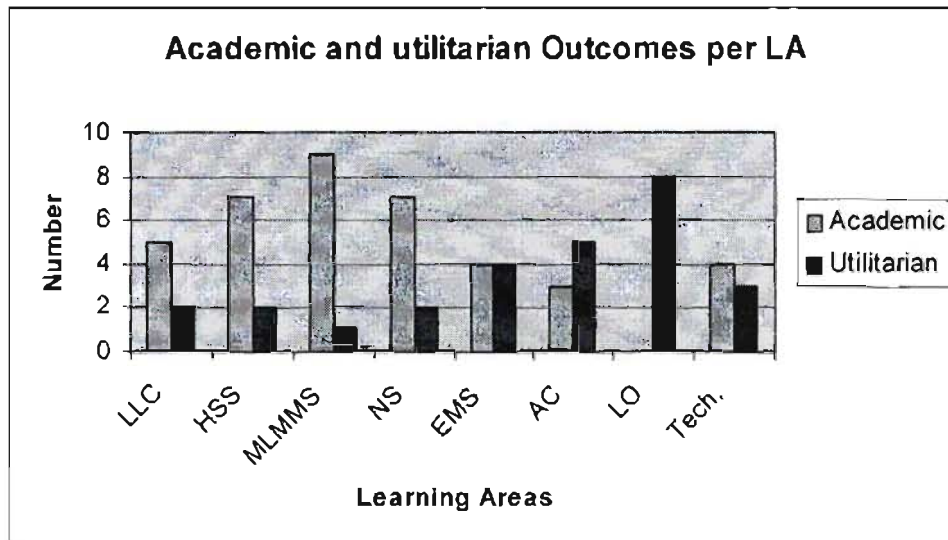


Figure 5.2 Academic And Utilitarian Outcomes Per LA

In MLMMS ten specific outcomes specify what learners must be able to do at the end of a learning experience. Nine of the ten outcomes are academic knowledge and skills outcomes, for example SO 1 ‘demonstrate an understanding about ways of working with number’ and SO 2 ‘manipulate number patterns in different ways’ (NDOE, 1997: MLMMS, 3). One of the ten SOs, SO 4, ‘critically analyse how numerical relationships are used in social, political and economic relations’ (NDOE, 1997: MLMMS, 14) is utilitarian of the social reconstruction type.

Of the nine SOs in NS (NDOE, 1997: NS, 6), five require students to demonstrate academic knowledge and understanding, for example. SO 4 ‘demonstrate an understanding of concepts and principles, and acquired knowledge in the Natural Sciences (NDOE, 1997: NS, 6) and SO 8 ‘demonstrate knowledge and understanding of ethical issues, bias and inequities related to the NSs’ (*idem.*). Three SOs require students to be able to use the academic skills of NS or the scientific inquiry process, for example SO 1 ‘use process skills to investigate phenomena related to NS’ (*idem.*). Specific outcome 7 ‘demonstrate an understanding of the changing and contested nature of knowledge in the NS’ (NDOE 1997: NS, 6) denotes the social-constructivist philosophy underpinning the NS LA.

Of the nine SOs in HSS, seven are devoted to acquiring academic knowledge and skills, for example, SO 6 ‘demonstrate an understanding of the interrelationships

between society and the natural environment' and SO 9 'use a range of skills and techniques in the HSS context' (NDOE, 1997: HSS, 2). Two specific outcomes of HSS, for example: SO 3 'participate actively in promoting a just, democratic and equitable society', and SO 7 'address social and environmental issues in order to promote development and social justice' are devoted to social reconstructionism.

Five of the seven outcomes for LLC are academic outcomes, for example, SO 3 'learners respond to the aesthetic, affective, cultural and social values in texts' and SO5 'learners understand, know and apply language structures and conventions in context' (NDOE, 1997: LLC, 3). Two outcomes are social reconstructionist, for example 'learners use appropriate communication strategies for specific purposes and situations.'

In EMS although both academic and utilitarian outcomes are equal there is strong emphasis and leaning towards utilitarianism as the following statement shows: 'Further, it is advocated that specific outcome one 'engage in entrepreneurial activities' 'should be at the heart of the learning programmes of the EMS' because 'it encapsulates all the elements of economic and financial activities' and 'it has a significant role to play in preparing the learner for the world of work' (NDOE, 1997: EMS, 4).

In AC the utilitarian outcomes dominate. Five of the eight SOs are social reconstructionist, for example, SO 8 'Acknowledge, understand and promote historically marginalized arts and cultural forms and practices' and SO 6 'use art skills and cultural expressions to make an economic contribution to self and society'. Three of the SOs are academic outcomes, for example SO 4 'demonstrate an understanding of the origins, functions and dynamic nature of culture' and SO 3 'reflect on and engage critically with arts experience and work'.

All eight SOs for LO are utilitarian in nature – personal, social and economic. The review committee (2000) suggested that some of the eight learning areas are dedicated to the social goal. Life Orientation is described as 'fundamental in empowering learners to live meaningful lives in a society that demands rapid transformation' (NDOE, 1997: LO, 2). An example of a personal outcome is SO 7 'demonstrate the

values and attitudes necessary for a healthy and balanced lifestyle' (NDOE, 1997: LO, 4). An example of an economic utilitarian outcome is SO 6 ' assess career and other opportunities and set goals that will enable them to make the best use of their potential and talents' (*idem.*). The social reconstructionist thrust is evident in the following 'justification' of SO 1-4:

Outcomes 2, 3 and 4 are based on the conviction that a strong human rights culture should form the basis of South African society in general and the educational environment in particular. Thus these specific outcomes 'seek to develop an understanding of the principles of a respect for human rights and their relevance to life. They aim to develop in learners the values, consciousness and competencies that are required for effective participation as responsible citizens of a democratic society. (NDOE, 1997: SOE, 5.)

The analysis of the SOs shows that the specific outcomes are articulated mostly in terms of academic goals for LLC, HSS, MLMMS, NS and technology; and in terms of utilitarian goals for EMS, AC and LO. An example of a SO that is focussed on meta-knowledge awareness or the fallible/social-constructivist nature of knowledge is 'demonstrate an understanding of the changing and contested nature of knowledge in the Natural Sciences'.

5.3.2 The Rationale For Each LA

The rationale specified for each LA provides an explanation of three aspects: why the LA is important to be included in the curriculum, what constitutes the essential elements of the LA and how the LA contributes to the achievement of the critical outcomes. The aim was to analyse whether academic or utilitarian reasons were used to justify the LAs.

An analysis of the rationale of each LA showed that, firstly, a greater number of points in the rationale for all the LAs are articulated in utilitarian terms. Of the 73 statements in the rationale 45 were utilitarian and 29 were academic. This is in variance to the SOs where on the whole totally, academic outcomes dominated over utilitarian outcomes. Secondly, the distribution of academic and utilitarian reasons differed across the LAs.

Table 5.3 Quantitative analysis of academic and utilitarian justification of each LA

Criteria	LLC	HSS	MLMMS	NS	EMS	AC	LO	Tech.	Total
Academic	5	3	2	2	0	7	4	6	29
Utilitarian	6	2	9	4	4	3	10	7	45

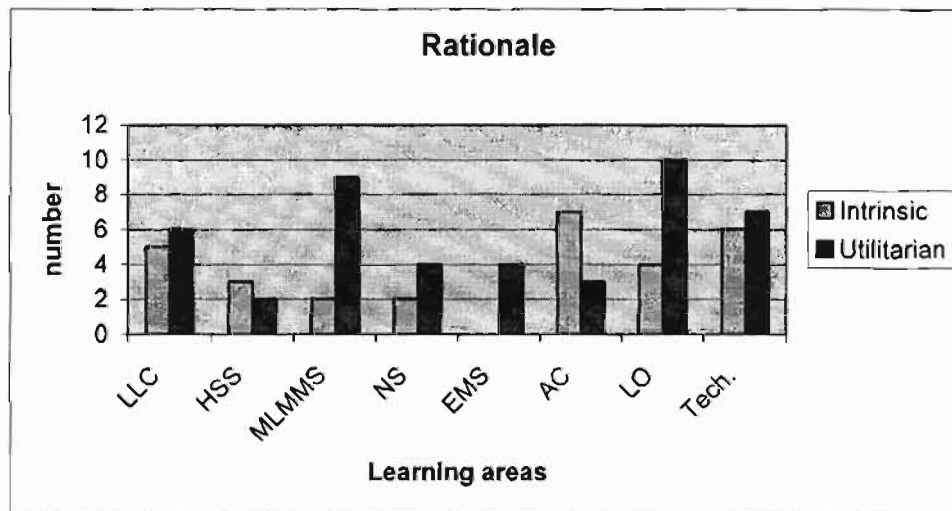


Figure 5.3 Academic And Utilitarian Reasons

Utilitarian reasons dominate in LLC, MLMMS, NS, LO and technology. Of the 12 listed points in the rationale in MLMMS, 10 are explicitly utilitarian, and social reconstructionist, for example:

These domains provide powerful numeric, spatial, temporal, symbolic, communicative and other conceptual tools, skills, knowledge, attitudes and values to:

- take transformative action; empowering people to;
 - work towards the reconstruction and development of SOUTH AFRICAN society;
 - develop equal opportunities and choice;
 - participate in their communities and in ...society in a democratic, non-racist and non-sexist manner.
- (NDOE, 1997: MLMMS, 2).

Only one of the reasons evokes the intrinsic value of the subject: to ‘derive pleasure

and satisfaction through the pursuit of rigour, elegance and the analysis of patterns and relationships' (NDOE, 1997:2).

Of the six reasons given for NS, four are utilitarian, for example, 'contribute to the creation and shaping of work opportunities' and 'contribute to ...citizens who can participate in an informed way in democratic decision-making processes' (NDOE, 1997: NS, 5). One of the academic reasons is 'enable learners to make sense of their natural world' (*idem.*).

EMS is rationalised wholly in utilitarian terms. The rationale of EMS makes the utilitarian focus abundantly clear:

The acquired knowledge, skills and attitudes will enable the learners to make a contribution towards the improvement of the standard of living, human development, justice, basic conditions of employment, fair labour practices, productivity, as well as opportunities for all to realise their full potential. (NDOE, 1997: EMS, 2.)

Of the 14 reasons given as a rationale for LO, 10 are utilitarian, for example 'it locates its vision of individual growth within the quest for a free, democratic and stable society, for quality of life in the community and for a productive economy' (NDOE, 1997: LO, 2). Personal reasons such as 'a healthy lifestyle', 'capacity to develop healthy relationships' and 'enhances the practice of positive values, attitudes, behaviour and skills' (NDOE, 1997: LO, 2) are given. Social reconstruction reasons such as 'works for a transformation of society in the interests of promoting a human rights culture ...the striving for a fully inclusive, egalitarian society free of all unjust discrimination' (NDOE, 1997: LO, 2).

The AC LA rationalises AC for its academic worth. The reclaiming of indigenous practices are emphasised in AC, thus:

The loss of original content among South Africa's indigenous cultures has assumed dramatic proportions. This LA seeks to mediate the acculturative process and affirm, honour, respect, acknowledge and salvage elements of indigenous culture...worthy of preservation for posterity. (NDOE, 1997: AC, 6).

There is an emphasis on social reconstruction in LLC, NS, HSS, MLMMS and LO. Economic utilitarianism is emphasised in technology, and EMS.

5.3.3 The Assessment Criteria (ACs)

The assessment criteria are defined as statements of the sort of evidence that teachers need to look for in order to decide whether a specific outcome has been achieved. A number of assessment criteria are specified for each SO. An analysis of the 309 assessment criteria specified showed, firstly that 246 or 80% are academic criteria and 63 or 20% are utilitarian criteria. There is greater emphasis on academic knowledge than on skills. Just 6 assessment criteria specify values and attitudes to be assessed. Examples of attitudes and values to be assessed in the AC LA are ‘involvement, commitment and participation’; and ‘social and affective skills such as acknowledgement, acceptance, appreciation and mutual responsibility’. (NDOE, 1997: AC, 11). Secondly the distribution of academic and utilitarian assessment criteria across the LAs differed.

Table 5.4 Just academic and utilitarian assessment criteria

Criteria	LLC	HSS	MLMMS	NS	EMS	AC	LO	Tech.	Total
Academic	43	32	42	51	23	23	9	24	246
Utilitarian	0	11	9	1	3	9	26	4	63

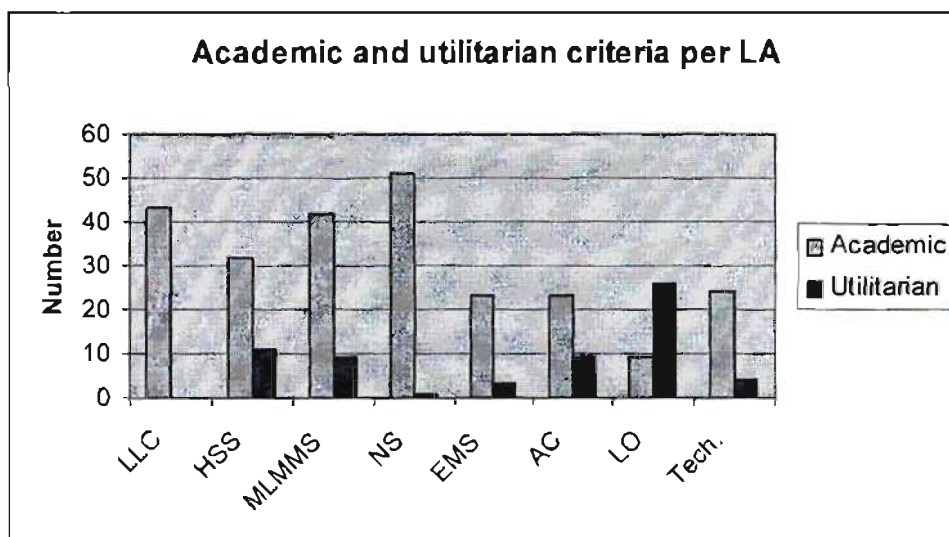


Figure 5.4 Just academic and utilitarian ACs per LA

With the exception of LO all other LA s outline greater academic criteria to be assessed. The ACs in MLMMS, NS, EMS, AC, Technology HSS and LLC emphasise academic knowledge to be assessed. Here knowledge of the core concepts of a Learning Area is to be assessed. For example, in MLMMS assessment criteria 1:

Evidence of some knowledge of rational and irrational numbers, including the properties of rational numbers, evidence of knowledge of number history, evidence of estimation approaches, evidence of knowledge of percent, rate and ratio. (NDOE, 1997: MLMMS, 4-5.)

In NS the assessment of core concepts and skills is paramount. The development of investigative process skills is viewed as central:

Processes of investigations encompass a number of different process skills such as questioning, observing, hypothesising, predicting, the collection, recording, analysis, evaluation and interpretation of data; and the communication of findings and/or conclusions. (NDOE, 1997: NS, 9.)

Assessment criteria focus on learners conducting an investigation, for example assessment criteria one under SO 1:

1. Phenomena are identified and questions are posed
 2. Situations are analysed and investigative questions are formulated
 3. Observations are made
 4. Hypotheses are formulated
 5. Predictions are made
 6. Investigative plans of action are formulated
 7. Evidence is collected and recorded
 8. Evidence is analysed, evaluated and interpreted
 9. Conclusions are communicated.
- (NDOE, 1997: NS, 9.)

The assessment of core concepts is stressed, for example, ‘science knowledge, concepts and principles are used to inform actions’. In harmony with the COs the Natural Science LA makes it clear that ‘theoretical knowledge is necessary but not sufficient’ and that ‘the ability to apply theoretical knowledge, concepts, principles to practical daily life situations and issues is the intended outcome’ (NDOE, 1997: NS, 11). The concept is further explicated, ‘it is through the ability to use, extend and apply knowledge that a learner can be said to ‘understand’ concepts and principles in

the NS (NDOE, 1997: NS, 11). The attitudes and values that learners must develop are made explicit.

Range statements within this outcome specify what knowledge should be learned, for example learners will develop their understanding of concepts and principles in each of the four themes:

- Earth and beyond: key concepts such as landforms, galaxies, climate, etc.
- Life and living: key concepts such as ecosystems, heredity, effect of environment on life-processes, population dynamics, etc.
- Energy and change: key concepts such as force, heat, electricity, velocity, homeostasis, etc.
- Matter and materials: key concepts such as particulate nature of matter, chemical bonding, relationship between properties and uses of materials, etc.
(NDOE, 1997: NS, 12.)

In HSS high level academic competences are prescribed to be assessed, for example assessment criteria 1: ‘the sources from which a knowledge of South African society is constructed are identified’ and performance indicator ‘identify bias in the use made of a source of evidence in constructing an account’ and assessment criteria 2 is ‘key features of change over time and space are critically examined’ that ‘will be evident when learners analyse the impact of imperialism and nationalism on different classes in South Africa over time’ (NDOE, 1997: HSS, 5).

In LLC academic knowledge is emphasized over utilitarian knowledge. Thus the first assessment criteria for SO 3 is ‘responses to the artistic effects of texts are demonstrated’ and ‘this will be demonstrated when learners are able to identify and talk about a wide range of written, visual and auditory genres’ and AC 1 under SO 5 is ‘knowledge of grammatical structures and conventions is applied ... this will be evident when learners create essays, writing of poetry, short stories...’ In addition under SO 5 very complex cognitive competences are prescribed to be assessed such as ‘use of adequate and correct vocabulary, adjectives, avoidance of clichés/ambiguity/verbosity as well as general sensitivity of language regarding gender/race/cultural issues’.

Academic skills are more important than academic knowledge in NS and LLC. There

is a fairer balance between academic knowledge and skills in MLMMS. EMS, AC and HSS emphasise academic knowledge over academic skills. Assessment of LA specific values and attitudes show in AC, MLMMS, Tech and HSS. Knowledge for personal development features in LO.

5.4 Diverse Forms Of Knowledge

C2005 reconceptualises what is regarded as valid knowledge for the school curriculum and legitimises diverse forms of knowledge: knowledge for its academic or intrinsic worth, knowledge of direct utilitarian value aimed at social reconstruction, knowledge for personal development and economic well being, knowledge for critical democratic participation and knowledge for further education. Firstly, as the table below makes clear, academic knowledge and skills dominate the curriculum.

Table 5.5 Total academic knowledge and skills

Criteria	Academic knowledge and skills	Utilitarian knowledge and skills
SOs	39	25
Rationale	29	45
ACs	246	63
Total	314	133

Secondly, the diverse forms of knowledge get varying emphases in the different learning areas. For example the utilitarian horizontal knowledge discourses and structures taught in LO are balanced with academic vertical knowledge discourses and hierarchical knowledge structures in NS and MLMMS. The emphasis in both NS and MLMMS LA is on academic knowledge, skills, values and attitudes and vertical knowledge discourse dominate. These findings are corroborated by Ramsuran (2004) and Graven (2002). Ramsuran (2004) in a detailed analysis of the NS LA found that substantial conceptual content was prescribed together with conceptual progression from concrete to abstract concepts. Graven (2002) identified four different orientations in MLMMS: mathematics for critical democratic citizenship, mathematics as practical and relevant, mathematics for its own sake and mathematics

to master skills and knowledge for future mathematics education in the FET band and university.

Thirdly, the utilitarian value of knowledge for economic, personal and social well-being is present in MLMMS, EMS, LO and AC. The utilitarian value of MLMMS is evident in many statements that indicate the usefulness of mathematics in many aspects of everyday life, for example, ‘perform basic financial computations, perform general tax and sales tax computations, pick and analyse authentic problems from newspapers and journals, critically analyse at least two investment scenarios, pick and analyse at least one local developmental problem’ (NDOE, 1997: MLMMS, 6). In the LO LA the utilitarian aim is emphasised and horizontal knowledge discourses dominate.

Fourthly, knowledge for social reconstruction is emphasised in all LAs. An ideology of social change (Ernest, 1991) underpins curriculum 2005. A strong attempt has been made to infuse all LAs with the principles of social justice and human rights; in particular the curriculum attempts to be sensitive to issues of poverty, inequality, race, gender, disability and sexual preference. The learning area statements emphasize to varying degrees the political role of each in the reconstruction and transformation of South African society. To achieve this goal mathematical, scientific and language literacy skills are aimed at. For example, in MLMMS:

A critical mathematics curriculum should develop critical thinking through MLMMS including how social inequalities, particularly concerning race, gender and class are created and perpetuated. (NDOE, 1997: MLMMS, 14.)

Fifthly, knowledge for empowerment and critical democratic citizenship is advocated. There is an emphasis on a critical awareness of the social, political and economic role of mathematics in society. For, example MLMMS ‘empowers learners to critique mathematical applications in various social, political and economic contexts’. Learners are expected to ‘identify equity issues of race, class and gender that arise from the manipulation of numbers in a social context,’ ‘critically analyse the inequalities existing during the apartheid era by analysing relevant data’ and ‘analyse how performance in maths has been used to block access to various professions’.

Assessment criteria 4 ‘evidence of the use of mathematics in politics: compare budget allocations under apartheid and after 1994’ (NDOE, 1997: MLMMS, 16).

Sixthly, knowledge to shape values and attitudes. MLMMS should contribute to values shaping, ‘describe the importance of valuing time and the negative effect of not seeing it as a valuable resource to be used optimally’ (NDOE, 1997: MLMMS, 19).

In LLC it is expected that learners ‘develop sympathy, empathy, awareness of relevant history, social conditions, human rights and experiences’ (LLC, 25).

Examples of attitudes and values to be assessed in the AC LA are ‘involvement, commitment and participation’; and ‘social and affective skills such as acknowledgement, acceptance, appreciation and mutual responsibility’. (NDOE, 1997: AC, 11). Also, the distribution of academic and utilitarian assessment criteria across the LAs differed.

Seventhly, knowledge of contestation of dominant western views of subjects as exclusively western contributions is advocated. In the MLMMS LA there are several references to contestation of dominant ideologies of knowledge, for example, the idea that ‘mathematics is a European product must be challenged’ (NDOE, 1997: MLMMS, 12). Range Statement 2.4 requires that learners demonstrate understanding of the ‘development of mathematics, including in the Middle East, Asia, Africa and South America’. In NS a similar point is made:

In order to make an effective contribution to education in South Africa, the NS LA is committed to ...challenging the perception that Science is predominantly a European discipline. (NDOE, 1997: NS, 2.)

Finally, knowledge for further education in the subjects. There is acknowledgement that much learning will not be used by learners in everyday life but will be built on later.

5.5 A Fallibilist/Social-Constructivist Theory Of Knowledge

A fallibilist or social-constructivist philosophy of knowledge underpins C2005. The dissolution of strong subject boundaries and the admission of social values and a

socio-historical view of the LA s with knowledge seen as culture-bound and value-laden is emphasised. The clearest statement of this is found in the NS LA: 'Demonstrate an understanding of the changing and contested nature of knowledge in the NSs' and 'demonstrate knowledge and understanding of ethical issues, bias and inequities related to the NSs'. Similarly, many statements in MLMMS emphasise the social-constructivist philosophy underpinning it. For example, SO 4 'critically analyse how numerical relationships are used in social, political and economic relations' makes this view clear. The aim is to develop critical thinking through MLMMS 'including how social inequalities, particularly concerning race, gender and class are created and perpetuated' (NDOE, 1997: MLMMS, 14).

The statements 'the investigative character of knowledge acquisition in the NS should be mirrored in education', 'learners should be active participants in the learning process in order to build a meaningful understanding of concepts, which they can apply in their lives' and wherever possible, practical work should involve active learner participation (NDOE, 1997: NS, 5) indicate that the theory of learning is that of the social construction of meaning, stemming from the theory of the social origins of thought of Vygotsky (1962) and the activity theory of Leont'ev (1978). According to this theory the child's knowledge and meaning are internalised 'social constructions' resulting from social interactions, the negotiation of meaning and engagement in 'activity'.

A concerted attempt is made to convey the human face of mathematics and science. For example, under SO 7 'science can be seen too easily as a body of immutable truths and therefore as absolute and without change. Learners need to know that science is a human activity dependent on assumptions that change over time and over different social settings'. In MLMMS the point that mathematics is a 'human activity that deals with patterns...' (NDOE, 1997: MLMMS, 2) is emphasised. In the rationale, mathematics is by definition a human activity. SO 3 requires that learners 'demonstrate an understanding of the historical development of mathematics in various social and cultural contexts' (NDOE, 1997: MLMMS, 12).

A brief comparison of C2005 goals with trends in curriculum restructuring in some developed countries follows.

5.6 International Trends And C2005

C2005 reflects national concerns as well as many of the international trends in curriculum restructuring in the developed countries. Taylor (1999) argues that in line with curriculum reform in the developed world that is based on a progressive consensus the 'new South African government has begun to express a remarkably coherent vision for education, which revolves around the principal tenets of the new progressivism' (*idem*:109). Many of the features of progressive education, outlined by Darling-Hammond (1997) such as 'interdisciplinary curricula aimed at making connections among ideas; research studies and other projects emphasizing the use of knowledge, the development of higher order thinking skills; cooperative learning; shared decision making among teachers, students and parents (1997:8) are reflected in C2005. This trend is distinguished from the conservative lobby that emphasizes tradition as opposed to multiculturalism in the curriculum.

That C2005 policy makers were mindful of the 'global competitiveness challenge' is evident from the vision outlined for South African'

A prosperous, truly united, democratic and internationally competitive country with literate, creative and critical citizens leading productive, self-fulfilled lives in a country free of violence, discrimination and prejudice. (NDOE, 1997:1.)

The role of the curriculum is to provide the platform for developing knowledge, skills and competences for innovation, social development and economic growth for the 21st century. (Rensburg, 2000). The vision is captured by the high order learning goals formulated by SAQA (1997) in its seven critical outcomes that are to underpin all curricula. The learning goals set make it clear that students must learn more than mere academic knowledge, skills, values and attitudes – knowledge must contribute to developing a economically competitive democratic society. These high order learning goals set are aligned with the progressive movement internationally.

Taylor and Vinjevoold (1999) argue that in contrast to the progressive stance in the developed world that articulates its learning goals in cognitive terms, C2005 does so

in political terms or what Bernstein (1996) calls the radical mode. This mode ‘focuses upon inter-class/group opportunities, material and symbolic, to redress its objective dominated positioning’ (*idem*:64). The radicalism in the curriculum is understandable in the light of the post-apartheid challenge, but many of the curricula reforms in developed countries show similarities with C2005. Darling-Hammond (1997) argues that in the political domain progressivism is centred on both **equity** and excellence. ‘It recognizes the increasing diversity of student and parent populations and argues for equality in matters of ethnicity, culture, class and gender’ (*idem*:19). The US *No child left behind* Act 2001 legislation is aimed at equal access to educational opportunities. The Nordic countries have the following common educational objectives:

Equal access to (lifelong) learning, teaching democracy, independence, equality and the development of critical awareness in pupils. The focus is broad ... and opposed to elitism. The teaching of democratic values is as important as the teaching of knowledge. The focus is on a ‘school for all. (Dahl & Stedoy, 2004:3.)

These broad goals resonate with the drive for equity in C2005. Specific guidelines in subjects also indicate shifts similar to C2005. For example, the Swedish mathematics curriculum from 2000 defines the goals to strive for in terms of competencies of reasoning and communicating with mathematics and of solving problems in everyday life situations, in other subjects, and within pure mathematics (Dahl & Stedoy, 2004:6) that resonate with the multiple goals set out in MLMMS.

Whereas, according to Bernstein in Britain ‘the radical mode is absent from the ORF and its presence in the PRF depends on the autonomy of that field’ (1996:65) in South Africa the radical mode is strongly articulated in ORF. The radical mode is evidenced in the high level learning goals being articulated in cognitive and socio-political terms in the specific outcomes, assessment criteria, range statements and performance indicators of the Learning Areas (discussed earlier). Value orientations such as non-racism, non-sexism and respect for human rights are to be taught as part of the instructional discourse. Students must learn more than mere academic knowledge, skills, values and attitudes – these must contribute to developing a democratic society.

In the developed world recent curricular reforms are characterised by an increase in the official implementation of interdisciplinary curricula. Recent curricular reforms in Australia (University of Queensland 2001) in the competency-based, 'Key Learning Area' structured national curriculum are some of the clearest examples of an official integrated knowledge curriculum. England's recent curriculum reforms also included theme-based, cross-disciplinary studies. According to Grossman and Wineburg (2000) in the US a national trend is that schools and districts have rushed to adopt interdisciplinary curricula. British Columbia's blueprint for school renewal, *British Columbia 2000*, places curriculum integration at the core of its reform agenda (Grossman and Wineburg, 2000). In Canada (Jardine, 1990) there is a similar focus on integrated curricula.

In the economic domain progressivism is mindful of the demands of the information age: the need for workers to be responsible, intelligent, and flexible in adapting to changing, competitive conditions (Weeres & Kerchner 1996 cited in Darling-Hammond: 1970). C2005 advocates that 'there should be clear evidence that learners are being prepared for life after school, i.e. life in the world of work, at institutions for further learning and for adult life in general'. The EMS LA is directed towards 'preparing the learner for the world of work'(NDOE, 1997: EMS, 4).

Epistemologically the progressive consensus is constructivist: learning must start in the life experiences of learners and classroom activities must consequently be learner-centred and equip children for applying knowledge to real world problems. C2005 advocates weaker classification between integrated subject knowledge and the everyday knowledge of pupils. This does not imply the pursuit of a simplistic practical curriculum.

Generally, C2005 resonates with curriculum reforms in the developed countries. The dissolution of strong subject boundaries and the admission of social values and a socio-historical view of knowledge and knowledge seen as culture bound and value-laden seem to be common.

5.7 Conclusion

In this chapter, the official curriculum was analysed. In summing up the following claims are made:

- Firstly, various elements of integrated codes as theorised by Bernstein: transformation of power relations, a focus on equity, an ideology of social change, weaker classification of knowledge, weaker framing, greater focus on the use of knowledge in real life and a variety of modes of assessment as well as the inclusion of socio-affective criteria in addition to cognitive criteria indicate a shift to the integrated code in C2005.
- Secondly, the analysis of the SOs shows that the specific outcomes are articulated mostly in terms of academic goals for LLC, HSS, MLMMS, NS and technology; and in terms of utilitarian goals for EMS, AC and LO.
- Thirdly, an analysis of the rationale of each LA showed that, firstly, a greater number of points in the rationale for all the LAs are articulated in utilitarian terms. Of the 73 statements in the rationale 45 were utilitarian and 29 were academic. This is in variance to the SOs where on the whole totally, academic outcomes dominated over utilitarian outcomes.
- Fourthly, an analysis of the 309 assessment criteria specified showed, firstly that 246 or 80% are academic criteria and 63 or 20% are utilitarian criteria. With the exception of LO all other LAs outline greater academic criteria to be assessed. The ACs in MLMMS, NS, EMS, AC, Technology HSS and LLC emphasise academic knowledge to be assessed. Here knowledge of the core concepts of a Learning Area is to be assessed.
- Fifthly, C2005 reconceptualises what is regarded as valid knowledge for the school curriculum and legitimises diverse forms of knowledge: knowledge for its academic or intrinsic worth, knowledge of direct utilitarian value aimed at social reconstruction, knowledge for personal development and economic well being,

knowledge for critical democratic participation and knowledge for further education.

- Sixthly, a fallibilist or social-constructivist philosophy of knowledge underpins C2005. The dissolution of strong subject boundaries; and the admission of social values and a socio-historical view of the LAs with knowledge seen as culture-bound and value-laden is emphasised.
- Seventhly, C2005 reflects national concerns as well as many of the international trends in curriculum restructuring in the developed countries.

C2005 is a hybrid product as it attempts to include different ideological traditions and diverse forms of knowledge that address the post-apartheid challenge and the global-competitiveness challenge. All learners must have equal access to the high status, intellectually challenging knowledge rooted in the disciplines, to interdisciplinary knowledge, to the positional nature of knowledge, to subjects as social constructions that reflect race, class and gender biases, to basic utilitarian knowledge and to a critical understanding of the role of academic knowledge in society. The statement from the NS (1997:11) that ‘theoretical knowledge is necessary but not sufficient’ and that ‘the ability to apply theoretical knowledge, concepts, principles to practical daily life situations and issues is the intended outcome’ encapsulates the theory of knowledge underpinning C2005. Accompanying the high level cognitive outcomes are a strong recontextualisation of the political and social goals of the country in the curriculum.

In the next chapter the school and curriculum practices of Grade 9 teachers of the elite school in the study is analysed and interpreted.

CHAPTER 6

CASE 1 INDEPENDENT GIRLS' SCHOOL (ROSEWOOD)

This chapter presents the findings of the independent girls' school, referred to as Rosewood, in three sections. Section A presents a socio-historical analysis. Section B presents a formal-discursive analysis and Section C presents an interpretation of the curricular practices in the school.

6.1 Section A Socio-Historical Analysis

This prestigious independent school for girls in the province of KZN is located in a middle-class previously White suburb. The school is regarded as one of Africa's leading independent girls' schools, and students from many African countries study at Rosewood. It originated from the amalgamation of two schools, a school founded in 1905 and another school (an Evangelical Protestant School for Young Ladies) founded in 1878. The school opened in January 1990. Amongst the many crises the school faced, one was the limited space in town, and this propelled the determined and committed drive for the school to move to a high-lying site about two kilometres from central town.

This school has deep historical roots. The senior school bell dates back to 1904, to the first steam ship to enter Durban Harbour. The junior school bell dates back to a ship used in the Second World War. The school historically took its cue from the British, especially English education, and symbolically aligned itself with English values. For example, the school is named after an English ecclesiastic and educationalist; the badge and motto were also borrowed from an English institution. The school had strong ties with elite international institutions such as Cambridge University and world-renowned academics

regularly address conferences organized by the Independent Schools Association. Other prestigious independent schools have also been very influential on the school.

A strong values-based education is offered. Firstly, the education offered is tailored to 'free' women to participate and contribute 'in the real world', and secondly, a Christian value base is overarching - for example, the theme chosen by the principal for 2005 is 'an awareness of the importance of a sound relationship with God'. It is an Anglican school and religious practice and education is an important aspect of the school. The school sets out to develop each girl's full potential in academic, sporting, cultural, social and spiritual spheres.

Hofmeyr and Lee (2002) show that the majority of independent schools now charge fees below R6 000 per annum and only 14% charge fees greater than R18 000 per annum. The fee structure puts Rosewood into the inner elite core of ISASA (Independent Schools Association of South Africa) schools that numbered 317 schools in 2003 (Hofmeyr and Lee, 2004). In 2005 the tuition fees charged for daygirls at Rosewood ranged from R9 200 per annum for reception class to R29 800 per annum for Grade 12 students. In addition to tuition fees, fees charged are for book hire and reprographic levy range from R460 for reception class to R1 600 for Grade 12 per annum. A development levy per family to the amount of R900 per annum is charged. Other fees paid when necessary include an IEB examination fee for Grade 12, for stationery, for subject-related consumables, for extra mural concerts, lectures, plays, excursions and transport. While the school is open to all, the very high school fees filter out all but the elite and upper class. Hence, the school has a predominantly White student population with a few Indian, Coloured and Black children.

During the time of the study, the relations between the ministry of education and independent schools were not amicable at all. The Minister of Education, Minister Kader Asmal, openly argued for greater centralized control over independent schools. This desire culminated in the Education Laws Amendment Act of 2002, which grants the minister power over admission age, discipline, curriculum and examinations (Hofmeyr &

Lee, 2002: 163). Articles in the local newspaper often carried reports on Asmal's views such as abolishing the Independent Examination Board examination. At a parents' meeting the principal reiterated Asmal's sentiments to parents that he 'did not like the IEB examination' but that ISSASA was prepared to contest the matter up to the level of the constitutional court on the basis of the rights of parents to decide on the education and examination they wanted for their children.

Aerial photographs of the school shows that the physical layout of the school certainly gives credence to Randall's (1982) analysis that many of the traditional independent schools in South Africa were modelled on the British public school system such that they constituted 'a little England in the veld'. Sprawling gardens and trees surround elaborate and beautiful buildings, an Olympic size swimming pool, tennis courts, and many large sports fields.

Befitting its status, the Rosewood campus and buildings were imposing, yet they projected a feeling of relaxed elegance. Propriety was the hallmark of this school. Its distinctive nature arose out of pronounced specialisation in every aspect of the school's life. Strong boundaries underpinned the naming and use of buildings and rooms, and of the fields and gardens.

Roles were specialised within a complex division of labour, with a large number of administrative and support staff, a qualified nurse, a PRO, a décor person, and a fleet of ground staff. Junior and senior sections of the school each had their own principal and management staff. A wide range of professionally coached sporting and extra-curricular activities were available.

State rationalization and restructuring of schooling over the previous 10 years of democratic rule had seemingly made little impact on the school's hiring of academic and support staff and the availability of resources.

The school had a wealth of intellectual, managerial and material resources. The material resources included state-of-the-art information technology, music and performing arts centres. The latest in electronic media and resources were housed in the library, and each pupil enjoyed Internet and e-mail access. The school kept up to date with information technology and a global perspective was encouraged. Communication through e-mail and the Internet together with the use of technologically relevant equipment was available to every girl. The development of individual web pages was included in both junior and senior Computer Literacy syllabi. Teachers were computer literate and incorporated IT into their lessons.

In addition to general audio and visual teaching aids such as OHP, computers, TV set and video machine, each class was furnished and decorated in subject-specific ways. The Geography room, for example, had fossils, maps, models, globes, aerial photographs, mobiles and instruments for map work. The Biology room was distinctive with its preserved specimens, plants growing in bell jars, models of human body and organs of the human body, wall-charts, microscopes, etc. The English classroom conveyed a more relaxed outlook with its arrangement of desks and chairs into small groups. Book reviews and wall charts adorned the pin boards. The Art room had a workspace separate from completed art works. In contrast with the vibrancy of other rooms, the Mathematics room was austere, with desks and chairs arranged in single rows and columns and a few 'rules for success' pinned on the notice board.

Opportunities for overseas travel were open to all girls. This included exchange programmes, participation in the USA global Youth Leaders Conference, Rotary exchange programmes and various sporting and cultural tours to foreign countries.

One of the distinguishing features of the school was its focus on the Creative Arts. Musical ability was nurtured in school choirs, in the junior and senior wind ensembles and through individual tuition in a wide variety of musical instruments. Art, speech and drama, debating and public speaking, the appreciation of literature and a respect for various languages provided for the aesthetic and cultural development of pupils.

Generally Matric pass rates had been 100%. In 2003 the total number of candidates was 63 and 62 passed with Matric exemption. There were 94 individual subject distinctions on the whole.

An outstanding characteristic of the ethos of this school was the ideological homogeneity amongst parents, teachers and students. The school catered for reception class, primary and secondary education up to Grade 12. This meant that from as early as three years, children were being socialised into distinctive mannerisms and routines valued by the school. The majority of the parents had very high-level senior professional and managerial occupations such as neurosurgeons, psychiatrists, commercial farmers, specialist doctors, attorneys and pharmacists. Another indication of elite socio-economic status was the upper middle class residential areas that students were drawn from. Teacher profiles described below indicate their positioning in the advantaged socio-economic strata also. The social class alignment of parents, students and staff provided a high degree of cultural continuity between home and school. These factors combined to produce a happy, caring and stimulating environment that was ideal for teaching and learning.

Like other independent schools Rosewood, in its Community Outreach programme had forged strong links with disadvantaged communities and with under-resourced public schools. The purpose was to make pupils aware of those who are 'less fortunate than themselves' and to fulfil the requirements of many tertiary institutions that are 'interested not only in academic achievement but in whether the prospective student has been involved in community work'. Opportunities were created for students to visit and play with orphans, visiting the elderly, collecting and distributing goods, helping at the SPCA, fundraising, and collecting and distributing gifts. The school and students participated in a variety of civic organizations including child welfare organisations, AIDS organizations, environmental groups and animal rights organizations.

Table 6.1 Rosewood teacher profile

Criteria	Teacher 1	Teacher 2	Teacher 3	Teacher 4	Teacher 5	Teacher 6	Teacher 7	Teacher 8	Teacher 9	Teacher 10
Age	25 - 29	30 – 39	50 +	30 – 39	30 – 39	50 +	50 +	40 – 49	30 – 39	40 – 49
Gender	F	F	F	F	M	F	F	F	F	F
FT / PT	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT
Rank	Teacher	Teacher	Teacher	Teacher	Teacher	Librarian	Teacher, Academic co-od.	HOD	Teacher	HOD
First language	Eng	Eng	Eng.	Eng	Eng	Eng	Eng	Eng	Zulu	Eng
Expr. (years)	6	10	30	10	13	28	27	16	10	24
Sch. att.*	WGH	PGH	HPH	HS	WS		GSHS	GHS	SC	SM DSG
Favourite subject/s	Art, Geog, Bio, Maths	Eng. Hist.	Hist. Eng.	Eng. Maths, BE	Maths Science, Geog.	Art, Bio, Geog.	Maths	Bio, Geog	Languages	Geog, Bio, Maths
Qualification	BSc. Hons. HDE	BA. HDE	BA Hons. B.Ed. TTHD	HDE IV Comm.	HED	BA. Higher Diploma Lib.	NSTD FDE	BSc. HDE	M4, Post-grad HRM Dip.	MSc. H.Ed.
Major Subjects	Geog. Bio.	Hist. Eng.	Hist. Eng.	Acc. BE, Eco. Typing	Maths, Com. Science	Art, Hist, Bib. Studies	Physics, Chemistry	Zoology, Psychology	Sociology, Guidance & Counselling, Zulu	Geog, Bio
Teaching Subjects	Geog, Bio, PE, Maths	Eng.	Hist.	Acc. EMS	Maths, Com. Science	Media, Art	Science	Biology	IsiZulu	Geog
Subject committee	APEK					APEK		IEB – Bio	KZN user group	APEK
Tertiary Institute	UNP	UND	Wits. UNP JCE	Technicon	Springfield college	UNP	NTC	UNP	UDW	UNISA

* WGH: Westville Girls High, PGH: Pinetown Girls High, HPH: Hyde Park High, HS: Haythorne Secondary, WS: Woodlands Secondary, GSHS: General Smuts High School, GHS: Girls High School, SC: Sukuma Comprehensive, SM: St. Mary's DS

6.1.1 Teacher Profile

The teachers at Rosewood were highly qualified and experienced teachers. Those involved in the study had an average of five years of tertiary education, with a number having Masters degrees and an average of 17 years of teaching experience. As is clear from the table most of the teachers in the school, as well as in the sample of Grade 9 teachers, were female. All were full-time teachers. In the sample there were 6 teachers, 2 HODs, 1 academic-coordinator and 1 librarian. Nine out of the ten were English First Language speakers and while only the Zulu teacher's first language was Zulu, her competence in the English language was unquestionable. Most of the teachers attended high schools that could be described as privileged with five having attended highly reputed ex-Model C schools themselves and one a private school. One of the teachers attended an ex-HOD school and another an ex-HOR school. The Zulu teacher attended an ex-DET school. The librarian was schooled in Zimbabwe.

All teachers were subject-specialists. Seven of the ten teachers in the sample had a university education, two a four-year diploma and one a technikon diploma. The teachers at Rosewood had a high level of expertise in both forms of vertical discourses. Three teachers had an MSc, a BSc Honours and a BSc degree. Major subjects taken at university were Biology, Mathematics, Physics, Chemistry, and Zoology. The high degree of specialization in a discipline was obvious. Three teachers held BA degrees; with one holding a BA Honours degree in History. Major subjects taken at university level include History, Geography, English, Sociology and Psychology.

The table shows very close correlation between favourite subjects as school pupils, major subjects at tertiary level and teaching subjects at school for eight out of the ten teachers. There was a smooth progression through stable and strong socialization into subject-based identities first at school level, then into major subjects at tertiary level and then teaching their subjects for up to 30 years. For, example, teacher 3 in Table 6.1 indicated that History and English were her favourite subjects at school; she majored in History and English at university, did her post-graduate studies in History and was teaching History.

The librarian did not show this pattern strongly. Art was her favourite subject as a pupil, she majored in it and was teaching it in school – her favourite subjects, biology and geography, were not studied as major subjects at tertiary level and she was teaching library education for which she has a higher diploma. It was therefore not surprising that having been through a generalist education and not having consolidated a specialist identity, she was, unlike her colleagues, an ardent protagonist of the integrated curriculum.

The teachers' loyalty to specific subjects goes back to their own school days. All valued the subjects for their intrinsic worth. In explaining why subjects became 'favourites' for them as school pupils themselves, teachers provided a variety of intrinsic reasons such as 'enjoyment of the subject because it was challenging,' 'love of literature,' 'it was interesting,' and 'it was fascinating.' Other reasons included being 'good' at understanding and application in science rather than 'learning facts' in the knowledge subjects. Subjects such as maths and science enabled 'divergent thinking, cognitive development and problem-solving'. Teachers mentioned the influence of an 'excellent teacher who made the subject interesting' as an important reason for having a favourite subject and many have mentioned that it was their aim in their teaching 'to create a love for their subject'.

Teachers felt confident about teaching another subject only if they were qualified to teach it. There were two broad divisions between the teachers that correlate with the two forms of vertical discourse – they were specialists in either the Sciences or the Arts and were willing to change to other subjects within the Arts or Science forms of knowledge, for example, the English and history teacher were willing to teach history and English respectively. The geography teacher was willing to teach any subject as long as it was a natural science. The science teacher was willing to teach mathematics. Most teachers were clear that they would not be able to teach outside their universe of knowledge, i.e. teachers who specialized in the Arts felt they would not be able to teach science and mathematics, and vice versa.

6.2 Section B Curriculum Practices

6.2.1 Introduction

The previous section outlined a socio-historical analysis of the school context. In this section a formal or discursive analysis of the curriculum structure and practices is done.

Rosewood had a twin-stream curriculum structure. A traditional, strongly subject-based curriculum was entrenched in a position of dominance, occupying 94% of the available timetabled time. Parallel to it, but clearly subordinate, was an integrated programme allocated 6% of instructional time, that provided girls the opportunity to conduct research in small groups drawing on integrated, inter-disciplinary knowledge. Table 6.2 below shows the contents of both programmes and the time allocated to each. The timetable reflects conventional subjects as well as six areas of learning under the integrated programme. The two programmes were strongly insulated from each other: whilst subject specialists taught the subject-based curriculum - the school librarian managed the integrated programme.

At the outset it is being made clear that although the integrated programme was clearly subordinate to the subject-based curriculum, as it was allocated just 6% of instruction time, and it was ‘taught’ by the librarian and another teacher. It was not formally examined, and it did not have any effect on promotion of students, its analysis and exposition is regarded as worthwhile for the following reasons:

- It illustrated clearly the ‘less rigid social structure’ that gave rise to ‘new forms of order and new forms of control’ associated with integrated curricula.
- It illustrated how outcomes that are based on an integration of knowledge and understanding from many specialised domains, for example making practical and moral judgments were enabled.
- It was based on and complemented a subject-based curriculum.
- It illustrated both continuity and disjuncture with Bernstein’s integrated code.

Table 6.2 The Twin-Stream Curriculum Structure

Elite school – two sets of curricula			
Subject-centred 14 subjects	Time %	Integrated programme	Time out of 6%
English	16	Research project	25
Zulu/Afrikaans/French	12		
Mathematics	16	Religious education	8.3
Science	6	Counselling	16.6
Biology	6		
Geography	6	Computers	33.3
History	6		
Art	4	CASE*	8.3
Speech & drama	4		
Accounting	6	Thinking skills	8.3
Technology	4		
Home Economics	4		
Physical education	4		
Total %	94		6

* Cognitive advancement through scientific experiment

In the section that follows an analysis of the subject based and integrated curricula are presented separately. In each the curriculum structure is analysed first. Secondly curriculum practices are analysed under three main headings – knowledge, pedagogy and assessment. In each subsection in addition to power and control relations, the intellectual development facilitated is focused on also. Thirdly, teacher perspectives that underpin the curriculum are analysed under the heading strong subject identity. Fourthly, how the integrated curriculum depended on and complemented the subject-based curriculum is outlined. Fifthly, a brief comparison of the schools curriculum with C2005 is done. Then ‘re-interpretation’ based on the socio-historical analysis and the discursive analysis is presented.

6.2.2 The Subject Based Curriculum

The structure of the curriculum, knowledge, pedagogy, assessment and socialising structures for teachers supported the teaching of pure, high status academic knowledge and skills.

6.2.2.1. Curriculum Structure

The rigid structure of the curriculum illustrated the power and control relations characteristic of the collection code – strong classification and limited options for students. Firstly, at the school level the curriculum comprised 14 strongly classified separate subjects. The school offered a wide range of specialised subject discourses and six areas of study. At Grade 9 level there was greater specialisation than in the other less elite schools in the broader study. Biology was being taught as a separate subject from science, a practice introduced in Grade 10 only in the government schools. Secondly, pupil choice was limited - the only choice was between Afrikaans and Zulu as language subjects. The remaining 13 subjects were compulsory. Thirdly, rigid timetabling set out what, with whom, where pupils learnt, and when they would be assessed. Fourthly, pupils of different ‘abilities’ were kept apart. The three Grade 9 classes were tracked into homogenous high, middle and low ability groups that were taught separately throughout the main curriculum.

Through the scape of stratification of knowledge a clear hierarchy of subjects within the subject-based programme came into view. The status of different subjects differed. The languages and mathematics enjoyed very high status being allocated 28% and 16% respectively. Mathematics and the main language, English, were allocated eight lessons followed by the second languages (Zulu, Afrikaans or French) that were allocated seven lessons. Then the sciences were allocated 12% and history and geography together were allocated 12%.

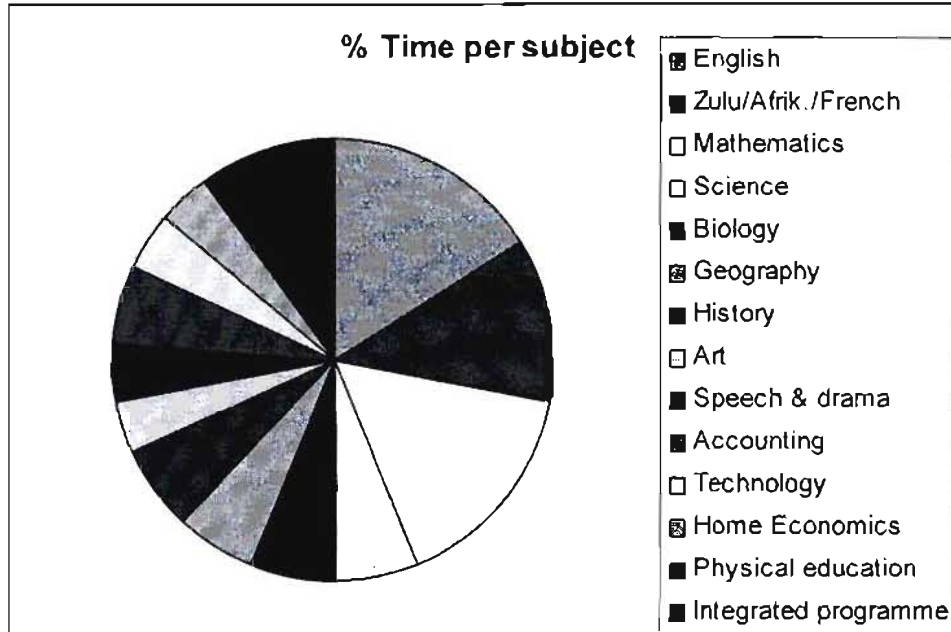


Figure 6.1 Distribution of time per subject and area of study

There was clear distinction between core and peripheral subjects. Table 6.2 shows that 68% of instructional time was allocated to traditional core subjects – languages, mathematics, science, biology, history and geography. The higher standard deviation of 4,1 and the higher variance of 16,9 indicate greater deviation from the mean and greater variance in time allocation to the subjects and LAs. This can be seen in the pie graph that shows the amount of time allocated to different subjects. These time allocations asserted the traditional stratification of knowledge into higher status core subjects and lower status peripheral subjects. The so-called knowledge subjects – biology, geography, history and science were allocated 3 lessons each.

Table 6.3 Standard deviation and variance

Upper SES school			
Subject-centred 14 subjects	Time %	D from Mean	D
English	16	8.9	79.2
Zulu/Afri./French	12	4.9	24
Mathematics	16	8.9	79.2
Science	6	-1.1	1.21
Biology	6	-1.1	1.21
Geography	6	-1.1	1.21
History	6	-1.1	1.21
Art	4	-3.1	9.6
Speech & drama	4	-3.1	9.6
Accounting	6	-1.1	1.21
Technology	4	-3.1	9.6
Home Economics	4	-3.1	9.6
Physical education	4	-3.1	9.6
Integrated programme	6	-1.1	1.21
Total	100		237.6
Mean	7.1		
Variance			16.9
SD			4.1

The remaining 32% was allocated to a greater diversity of subjects such as art, speech and drama, accounting, technology and home economics. While PE was allocated just 2 lessons in the timetable, pupils had the benefit of a full sports programme after school. Music was not timetabled but a variety of musical genres were formally taught.

6.2.2.2 Curriculum Practices

An overall summary of the Rosewood curriculum is presented in tabular form below.

Table 6.4 The two curriculum structures at Rosewood

Concept	Subject-based curriculum	Integrated curriculum
Curriculum content	14 separate subjects	Choice of 9 inquiry-based activities requiring inter-disciplinary knowledge
Status and time allocation	Dominant, allocated 90% of instructional time	Subordinate, allocated 10% of instructional time and more use of 'after school time.'
Timetabling	Rigid, no options	Less rigid, greater options
Regulated and taught by	Regulated by school principal, management staff and teachers, and taught by specialist subject teachers	Regulated by school principal, library educator and enthusiastic biology teacher; and facilitated by latter two
Pupil grouping	Homogenous – size and composition fixed – three Grade 9 classes: high, middle and low ability	Heterogeneous – small groups of 3 or 4 pupils decided on by pupils
Pupil choice	Limited	Extensive – pupils may choose any topic, media, etc.
Valid knowledge	Pure, subject knowledge and procedures. Criteria, procedures and standards of the discipline are paramount.	Application of integrated subject knowledge to a real life problem.
Classification of knowledge	Strong classification. Subject boundaries are impermeable.	Weaker classification. Subject boundaries are blurred.
Classification of space	Strong – all lessons in specialist classrooms.	Weak – most learning occurred in the library and computer room.
Framing of knowledge	Strong framing – selection, sequencing, pacing and evaluation of knowledge controlled by teacher but sensitive to individual difficulties	Weaker framing – selection, sequencing and pacing of knowledge controlled by pupils.
Framing between educational and everyday knowledge	Strong framing - everyday knowledge might be recruited to illustrate subject concepts.	Weaker framing – the focus is a real life activity or task with strong value orientation.
Pedagogy	Visible, didactic. Criteria and standards are explicit.	Invisible pedagogy – learning is group regulated.
Recognition rules	Explicit	Implicit
Cognitive demand	High order disciplinary thinking skills; teachers aimed to extend and elaborate existing cognitive schemata.	High order thinking skills aimed at synthesizing subject knowledge to arrive at understanding of real world issues.
Assessment criteria and mode	Formal tests, examinations, assignments - individual cognitive competences and skills assessed by the subject teacher.	No formal examination. Different modes of assessment testing cognitive and social competences. Group scores are awarded.
Mode of control	Personal	Personal
Social relations amongst teachers	Independent and territorial; interdependency within subject departments.	Subject teachers participated independently in design and evaluation of programme.

Table 6.5 Conceptual Analysis Of Both The Subject-Based And Interdisciplinary Curriculum

Criteria		Geography	Biology	Science	Mathematics	History	English	Art	Int. prog.
1. What knowledge taught?		Conceptual knowledge, language, skills, values and attitudes of each subject. Epistemic operations of the subjects emphasised.							Inter-disciplinary
2. Discursive relations	Inter-discursive	C++	C++	C++	C++	C++	C+	C+	C--
	Intra-discursive	C++	C++	C++	C++	C+	C++	C+	C--
3. Control relations - ID	Selection	F++	F++	F++	F++	F+	F++	F+	F--
	Sequencing	F++	F++	F++	F++	F+	F+	F+	F--
	Pacing	F++	F++	F++	F++	F+	F++	F+	F--
	Evaluation	F++	F++	F++	F++	F++	F++	F++	F+
4. Framing bet. specialist and everyday knowledge		F+	F++	F++	F++	F+	F+	F+	F-
5. Control relations - RD		F-	F-	F-	F-	F-	F-	F-	F--
6. Pedagogy	Visibility	Visible	Visible	Visible	Visible	Visible	Visible	Visible	Invisible
	Recognition rules	Explicit	Explicit	Explicit	Explicit	Explicit	Explicit	Explicit	Implicit
Instruction	Whole class	80%	70%	70%	80%	60%	50%	10%	0%
	Small group	0%	10%	10%	0%	20%	40%	0%	80%
	Individual	20%	20%	20%	20%	20%	10%	90%	20%
7. Assessment	C/SA*	C	C	C	C	C & SA	C & SA	C & SA	C & SA
	S/MM*	S	S	S	S	S	S	S	M
	I/Grp.*	I	I	I	I	I	I	I	I & Grp.

*C/SA – Cognitive/socio-affective *S/MM – Single or multiple mode *I/Grp. – individual/group

6.2.2.3 What Knowledge Was Taught?

Although it is difficult to separate knowledge from pedagogy, in this section the focus is on the knowledge taught, while pedagogy is discussed in detail in Section 6.2.2.9.

Table 6.6 Explicit teaching of academic subject knowledge, skills, values and attitudes

Subjects/ area of study in time-table	Explicit teaching of subject knowledge, epistemic operations and language	Explicit teaching of subject/area skills, values & attitudes	What competence Cognitive or socio-affective	Level Very complex, complex or simple
Mathematics	3	2	CC	C
English	3	3	CC	C
History	3	3	CC & SA	C
Science	3	3	CC	C
Geography	3	3	CC	C
Accounting	3	3	CC	C
Art	3	3	CC	C
Drama	3	3	CC & SA	C
Home Economics	3	3	CC	C
Biology	3	3	CC	C
Media	3	3	CC	C
LO/counselling	1	3	CC & SA	C
Technology	3	3	CC	C
Inquiry projects	3	3	CC & SA	VC
Religious education	3	3	CC	C
Computer education	3	3	CC	C
Thinking skills	3	3	CC	VC
*CASE	3	3	CC	VC

3 – very explicit, 2 – explicit, 1 – not explicit

CC – cognitive competence, SA – socio-affective, C – complex, VC – very complex, S - simple

*CASE Cognitive Acceleration through Scientific Education.

6.2.2.4 Academic Knowledge For Its Intrinsic Worth

Table 6.6 shows that subject knowledge and processes were taught explicitly in all subjects and areas of study. The curriculum was mostly content-focused and stressed

abstract and theoretical knowledge for examination purposes. The distinctive languages, epistemic operations, interrelated concepts and tests of truth claims of each subject were taught. An example of a transcript of a lesson taught, described verbatim as far as possible, is included in Appendix A.

Many subject notions were predicated. Teachers introduced new concepts at a rapid pace, for example, in a Geography lesson thirteen concepts were taught, in a Biology lesson twenty-four concepts were explained during a review of a test, fifteen notions were taught in a science lesson and eleven in a mathematics lesson. The unique features of each subject and its specialist language, criteria, concepts, procedures and routines were explicitly taught. Pupils were systematically inducted into the cognitive norms and values of each subject. Academic values and attitudes were targeted, for example, the development of a scientific attitude, applying mathematical procedures to solve problems, appreciation of poetry and novels.

The specialized and complex language of each subject was explicit. In science, geography, biology and mathematics the hierarchical structures of each subject was taught. The development of vertical progression in conceptual knowledge in a subject was the aim and teachers taught basic concepts first and systematically built them into complex concepts. For example in the science lesson the teacher moved from a scientific definition of work to measuring how much of work was done. These points are illustrated with a number of short vignettes from different specialist classrooms.

6.2.2.4.1 Geography

The topic was continental drift, and the jigsaw puzzle theory of continental drift was being introduced. Tectonic plates were numbered, and the movement occurring at each plate boundary – rifting, colliding or transversing – was explained. The table below – a summary built up on the chalkboard - is typical of the complex specialist language taught deliberately and systematically to pupils.

Table 6.7 Factors In Continental Drift

Boundary Types	Processes	Features Formed
Colliding plates – destructive plate boundaries.	One plate is being subducted beneath the other.	Oceanic trenches, earthquakes, volcanoes, fold mountains.
Rifting plates – constructive plate boundaries.	New sea floor is being formed. Plates moving apart.	Volcanic islands, oceanic ridges, rift valleys.

In a follow up lesson the geography teacher, with the aid of fossils, explained specialized geological knowledge on rocks and fossils to provide evidence for the theory of continental drift. It would be extremely difficult to relate the specialized geographic knowledge to the real everyday knowledge of the pupils, yet it was knowledge of intrinsic worth that enabled the understanding of geomorphological features that for the teacher was just “fascinating”.

6.2.2.4.2 Biology

The specialist language in a series of Biology lessons included hygroscopic water, capillary water, groundwater, water table, borehole, spring, evaporation, and transpiration. The processes of the subject (Stenhouse, 1983) were also taught. As an example, an experiment to show plant transpiration was used by the teacher to explain the concepts of experimental and control variables. Pupils were then asked to write a report of the experiment using the scientific style of writing. They were told that they ‘would not get away with just recalling information’ because they were learning to be ‘good biologists – to think like good biologists’.

6.2.2.4.3 Science

In science there was clear definition of distinctions between common-sense definitions of work and scientific definitions of work. The scientific formula for work was given and explained. Pupils then did many examples using deductive reasoning. The table below was constructed on the board:

Table 6.8 Scientific Definitions Of Work

Girls	Weight	Distance	Work done	Time	Work time power output =watt=1J/2
L	530 N	2,4m	1272 J	3 sec	424J/s
R	490	1,87m	96,3J	2,8s	318,1J/s
S	520	2,4m	1248J	3,5s	356,6J/s
F	390	1,37m	729,3J	3,4s	214,5J/s

The progressive pedagogic strategies used by the teacher are described in detail in Section 6.2.2.9. Below. All teachers emphasized conceptual progression. For example, the science teacher explained the need to teach the basic concept followed by the deep structures:

“Science is unique along with mathematics in that it requires grounding, one concept is developed from a previous concept, we have to start with elementary concepts and build on that... there are certain concepts that we have to teach in science, we have to start with the basics – let’s take electricity and its effects on the environment – I would find it very difficult to teach electricity without having taught the basics about what electrical current is and how it is produced – we have to develop the basics first.”

6.2.2.4.4 Mathematics

Pure, absolute mathematical knowledge was being taught in a traditional manner. Topics taught were expanding numbers with complex components and direct application of the law of indices, addition of polynomials, terms in an expression, constant terms, coefficient, degree of the polynomial and arranging the polynomial in descending powers of x.

6.2.2.5 Subject Procedures Taught

A general feature of all lessons across specialist fields, including the ‘non scientific’ was that teachers went beyond the transmission of the stock of knowledge of the subject into the principles regulating the construction of knowledge in the subject using the structures (Bruner, 1971) of each subject. For example, in a poetry lesson the teacher taught appreciation of poems, the structural aspects of poetry such as

rhyme and iambic pentameter, and techniques used, such as personification and metaphor. In another lesson the topic was analysis of comprehension questions into ‘on the line, between the line and beyond the line questions’ and enabling pupils to identify these types of questions so as to be able to give meaningful answers.

Pupils were given opportunities to construct knowledge using the conceptual tools of the disciplines. For example, science projects required that pupils formulate a problem and use their knowledge of science and the scientific enquiry method to set up an experiment and control, to manipulate variables, to observe effects, to collect and record data, to collate and analyse and interpret data and to write a report of the project and also do a presentation. Biology lessons were orientated to pupils setting up experiments and observing the changes. In English lessons, pupils were expected not only to read, understand and appreciate literature, but to also write their own poems and short stories by applying techniques taught to them.

6.2.2.6 Subject Attitudes And Values Taught

There was strong emphasis on the unique and distinctive values and attitudes inherent in each subject. For example, the science teacher expected that pupils learn the scientific attitude and apply it as a way of thinking in their lives:

I: So it is knowledge and skills?

R: Yes.

I: Any values and attitudes at all that you look at?

R: In science we look at the scientific attitude - is important – we need the method clearly thought out – the collection, presentation and explanation of data – a lot of logical thought but then at the end they must be able to present it orally and graphically.

However, strong boundaries were maintained between the subjects and socio-political values. For example, in English where the novel *To Kill A Mockingbird* was being analysed the main theme of challenging prejudice was unravelled without an explicit correspondence with the general situation in an apartheid context. Making the connection explicit amounted to “preaching values” to the teacher. Pupils were left to make the connections themselves.

Stringent demands were made on pupils to use the specialist language of each subject in formulating responses. Recognition rules were explicit. Pupils appeared to be careful not to mix the contexts of different subjects in constructing their own answers. Specialist skills, states of knowledge and ways of knowing within a discipline were being transmitted in the core curriculum.

6.2.2.7 Competence And Cognitive Demand

Cognitive goals dominated the curriculum. Students engaged in creative and analytical thinking, interpretation, generalisation and problem solving in each subject separately. Socio-affective competences were evoked in History and English lessons, but were not explicitly aimed at.

6.2.2.8 Classification Of Knowledge

6.2.2.8.1 Inter-Discursive Relations Across Subjects

The strong classification of subjects at the level of the school was maintained by exceptionally strong framing of the subjects by teachers in the classroom. Teachers maintained impermeable boundaries. As Table 6.5 shows, the classification of subjects ranged from very strong to strong classification. Mathematics, Science, Biology and Geography teachers maintained very strong classification while strong classification was kept in English, History and Art. Each subject had “its own unique identity, its unique voice, its own specialized rules” (Bernstein, 1996).

In terms of relations across subjects, cross-referencing across subjects such as History and English was done. The English teacher would, for example, discuss the historical context of a set book or a poem when necessary. The connections between the subjects were not made explicit.

6.2.2.8.2 Intra-Discursive Relations Within The Subjects

Very strong intra-discursive classification was demonstrated. Different sections in the different subjects were taught in strongly classified units. For, example, in mathematics the teacher taught algebra with no reference to geometry, data processing, number concept and measurement the other main sections of the syllabus.

6.2.2.9 Pedagogy

6.2.2.9.1 How Was Knowledge Taught?

With the exception of mathematics where conservative visible didactic pedagogy dominated, child-centred progressive pedagogy was the norm in the school. This point is substantiated with brief descriptions of the pedagogic strategies of different teachers.

In mathematics the entire lesson was teacher-led whole group question-and-answer followed by individual work by pupils. The teacher took the role of lecturer and explainer, one of the qualities of old humanism. After explaining examples on the board, students were required to apply the same procedure to many similar examples. The work bordered on drill and the rote application of rules. A poster in the classroom read:

3 ways to pass your mathematics examination:

1. Listen to the teacher and concentrate
2. Be committed and determined
3. Believe in yourself and have a positive attitude

This illustrates the focus on regulative discourses rather than deep instructional discourses. Photocopied worksheets that assessed application of routines and procedures were used profusely. In De Lange's hierarchy of goals of mathematics most of the tasks were at the lower level that required students to apply routines and procedures in a routine and standard way. Deep conceptual understanding that required students to think about and use their own strategies to solve mathematical problems was not taught.

A variety of learner-centred progressive pedagogic practices were part of the established culture of the school. Teachers provided support for individual students in the form of individual tutorials. Students were really interested, engaged and happy! Students frequently asked questions framed within the discourse of the subject. A variety of activities: observing, listening, reading, discussing and writing were engaged in. The learning environment was characterised by warmth, acceptance and protectiveness. Students voluntarily submitted to the demands of the subject.

Teachers worked hard to extend, modify and elaborate pupils' conceptual knowledge of the subject. Explanation, encouragement, facilitation, carefully structured learning activities and opportunities for exploration and discovery of knowledge were noted. Students learned actively by doing. For example in a science lesson pupils were physically engaged in collecting data needed to work out a formula. The very abstract section on 'work' was mediated by giving the pupils an authentic problem: how much energy is used in running up and down these stairs? About 30 steps that provide access from the school to the sports field on a lower level was used in the task. The pupils had to get into groups of two or three and work out the answer. They had to run up the stairs and time each other, to measure the height of the stairs and their own weight. Through these activities they had worked out weight, distance and time taken, the data required to apply the formula and work out the answer.

In history role-playing historical figures and dramatizing historical situations was common. Pupils were set a task in which they had to explain as representatives of specific countries why they were not responsible for the World War 1. Pupils needed to do research on the country's view of the situation and then build an argument absolving them of responsibility for World War 1. The social construction of knowledge was facilitated. In history using role-playing to develop empathy was common, for example, in a lesson students were to imagine that that they were women in World War 1 and explain how they felt about their dads and brothers sent to fight in a foreign country. The aim of the task was to understand the heartbreak and troubles that faced women during World War 1.

In biology the lesson started with observation of an experiment on tropism. Students' engagement and excitement about changes that had occurred were evident. Pupils checked on their plants and saw to watering and light requirements. Then interactively through question and answer the teacher explained a number of abstract concepts – experiment and control - to learners. Pupils followed in worksheets and completed answers also. The skill of writing scientific reports was being taught by explanation first and then by application.

In geography pupils often made models of geographic phenomena that were displayed in the classroom. In English pupils were asked to prepare a presentation on a chapter of their set book *To Kill a Mocking Bird*. Role playing and dramatization was done in groups – some kept strictly to the text while others were more imaginative in contextualising the chapter in current topics that all could identify with such as presenting within a theme like 'Rosewood gossip line' and 'arguments in families' for the Jerry Springer Show.

There was a mixture of learner-centred, teacher-directed, group and individual work. In all lessons pupils were actively involved cognitively in a variety of activities like working in groups or in pairs, reading, writing and discussion. There were many shifts in activities planned by the teacher throughout the lesson and pupils participated fully.

The structure of the classroom served the goal of cognitive construction (Piaget) of knowledge. Table 6.4 shows the dominance of whole class instruction in geography, science, mathematics, and biology. Of all classes observed, it was only in the English classroom that pupils were seated in groups that facilitated pupils' social construction (Vygotsky) of knowledge through face-to-face interaction amongst themselves. Various sorts of arrangements were seen with the common aspect of individual work being promoted. For all other subjects students were seated in various formations of rows and columns that allowed greater individual knowledge construction and interaction between teacher and pupils rather than amongst pupils.

6.2.2.10 Control Relations

6.2.2.10.1 Strong Framing Of The Instructional Discourse

Teachers maintained very strong framing of the instructional discourse. In all lessons observed the teachers' power was clearly visible in the selection, sequencing, pacing and evaluation of knowledge, hence coded as F++ and F+ in Table 6.5. The strength of framing varied from very strong framing in mathematics, biology, geography and science to strong framing in English, History and Art. In terms of selection of knowledge to be taught teachers followed the traditional syllabus. The progression and sequencing of subject topics and concepts were drawn from the structure of the discipline. Vertical progression from basic to complex concepts aimed at meanings being integrated vertically. Teacher explanation was pronounced, they explicated concepts through thorough questioning, and they provided clear evaluative criteria and judgments on what was acceptable and not acceptable. Framing of evaluative criteria and judgment was brisk, with pupils being made well aware of misconceptions, or of incomplete answers. While recognition rules were explicit, students were expected to come up with different approaches and methods in applying knowledge and there was ample room for individual creativity within the framework of the task.

6.2.2.10.2 Strong Framing Of Academic From Everyday Knowledge

Teachers maintained strong framing between specialist subject knowledge and everyday knowledge. In a subordinate role, everyday knowledge was sometimes recruited in the service of a particular discipline in a way that illuminated disciplinary understanding. The extent to which this happened varied across the subjects. All teachers started their lessons by reviewing what pupils knew. There were many examples of recruiting everyday knowledge to explain subject concepts, such as in biology where the concept of a natural spring was made clear by reference to the familiar to these pupils - which bottled water came from spring water. The concept of groundwater was made clear by reference to boreholes to access groundwater, and the concept of mesophytes was made accessible by referring to examples of mesophytes that are garden flowers such as agapanthus, clivia, azalea and roses.

After concepts were acquired, teachers referred pupils to disciplinary ways of using these concepts to make greater sense of everyday knowledge. In science, for example, pupils were asked to compare the energy levels contained in different bars of chocolate. Teachers were able to move easily from the everyday to formal subject knowledge and from the formal to the everyday.

6.2.2.10.3 Weak Framing Of The Regulative Discourse

Hierarchical inter-personal relations that were very personal and supportive between teachers and pupils served the goal of the acquisition of specialist subject discourses. Control of pupil behaviour was hardly an issue because in most cases students had been in the school since beginning their school careers in the reception class and had imbibed the manner, etiquette and attributes valued by the school. This form of socialisation was, in any event, facilitated from the outset by a marked socio-cultural continuity between home and school. Implicit forms of social control and positioning practices were tantamount to an 'invisible' regulative discourse. With this in place, instruction time was used wholly for instructional discourses.

The worth of students was being judged on the basis of their cognitive competence in the subjects. This was made clear by the mathematics teacher's remarks by either praising or expressing disappointment about how students performed in tests and exams. While a few students were recognised as mathletes, mathephobia (Ernest, 1999) was the norm amongst students. In all other subjects students were appreciated for their talents and ingenuity as individuals as well as for their 'ability' in the subject.

6.2.2.11 Assessment

The formal assessment of cognitive competences of individual students in each subject was the most common form of assessment. Pupil performance was judged on complex cognitive competences and mastery of subject knowledge and procedures, and being able to solve problems within the disciplinary structure.

The epistemic operations that were being assessed are illustrated by short vignettes from test and assignment papers. The unique epistemic operations of mathematics – formalisation and symbolization are evident in the following questions that appeared in a mathematics test:

a. Given: $2x-4x-3+5x$: How many terms are there in this expression?

What is the constant term?

What is the coefficient of x ?

What is the degree of the polynomial?

Arrange the polynomial in descending powers of x .

b. Calculate the following and give your answer in scientific notation: $4,37 \times 10 +$

$3,56 \times 10$

$1,2 \times 10$

The historical epistemic operations - appeals to the textual aspect of historical sources; the aims, rules, general principals of a social agent, consequences and implications, socio-cultural context and spatial and temporal context are evident in the following questions that appeared in a test:

Study the extract and answer the questions that follow:

Why was Franz Ferdinand visiting Sarajevo?

Who assassinated Franz Ferdinand and why?

Which country encouraged Austria to pick a quarrel with Serbia?

Why did the assassination lead to the outbreak of World War 1?

In Biology students were being assessed on their ability to do and write a report of an experiment.

Write up what you did as a scientific experiment. Refer to the note under skills. You were also taught the correct way to write up an experiment last year. Each pupil must hand in a write up (of your own work). Include a drawing of your final result under results.

Teachers were very reticent about formally assessing values and attitudes:

I: In terms of assessment what do you assess?

R: I just look at whether what they say makes sense and how much of the concepts they have understood when working through something

I: Do you balance out knowledge, skills, values and attitudes?

R: No

I: So what do you emphasise?

R: Understanding of whatever we are doing.

In geography students' opinions were regarded as important in terms of the subject.

D: In terms of assessment it is obvious that you assess knowledge and skills – do you include values and attitudes?

P: Yes I do because they are asked to give opinions – they are asked to evaluate – but I won't say we do that formally – we build it into the structure – but in most of the tasks they are asked to give their own opinion – possible solutions – very much part of geography – to come about with suggestions and solutions. I assess debates and group work also.

Teachers made use of multiple modes of assessment such as formal, traditional paper-and-pencil tests and examinations, project presentation and poster presentations, and video analysis to better assess acquisition of subject knowledge and skills. Continuous assessment was also being done.

The assessment structure was geared towards facilitating students' acquisition of the specialist discourses of each subject. Teachers were using progressive techniques of assessment to better assess students' subject competences. Teachers strongly classified 'what knowledge ought to be assessed' in terms of the subject, but were willing to make changes in 'how they assess'. In case an erroneous perception is made that academic ability was the only end, wholesome social values were also rewarded. Students were publicly acknowledged and awarded, during the annual awards function, for many socio-affective character traits such as kindness, compassion, care, a sense of humour, charity and innovativeness as well as academic competences in the different subjects.

6.2.2.11.1 Social Interaction Across Teachers

Interactions between teachers of different subjects were restricted to non-educational topics or educational topics that did not involve their subject specialisations. This aspect was patently clear when all teachers were required to be present to assess the integrated programme. Teachers within a subject department collaborated minimally

with each other and took direction from the HOD who in turn was directed by the deputy principal (DP) and principal.

The organisation of knowledge underpinned educational interactions amongst staff. Strong subject identities of teachers (discussed later) were continuously strengthened through social interaction within the department and through the insulation between departments. Subject associations organised by the IEB played a major role in reinforcing teachers' subject-based identities and in keeping them abreast of changes in the subject at higher levels of thought.

6.2.3 The Interdisciplinary Programme

Although allocated just a tenth of instructional time and more use of 'after school time' was spent on the program, the integrated programme offered ideal conditions (material and discursive resources), in which to study the structural and social dynamics of integrated curricula based on 'traditional' disciplinary curricula.

A short orientating description of the programme is presented before a conceptual analysis of the integrated programme is done. Planning and management of the interdisciplinary programme was the responsibility of a steering committee comprised by two co-ordinators (the librarian and a biology teacher) and the principal.

Four factors influenced the content of the integrated curriculum – tradition, national policy, independent schools regulation and the failure of the media studies course. That other independent schools were influential in deciding on the curriculum was evident in the choice of two areas of study. The thinking skills idea based on De Bono's thinking skills, that highlighted lateral thinking, was promoted by the principal and an educator who taught at Michaelhouse reputed to be the most prestigious independent boys' school in South Africa. CASE (Cognitive Advancement through Scientific Experiment) was promoted by Hilton College, another prestigious independent boys school. The purpose of CASE was to teach different methods of thinking for scientific problem solving. The research project area was included because, firstly, the media studies class was failing because 'the

girls did not see the point of becoming good researchers' and were using electronic media in a mechanical way, and secondly, because Outcomes Based Education is skills based and doing a research project would allow for both development of research skills as well as C2005 requirements. Counselling was a life skills course that included problem solving, decision making, combating peer pressure and establishing a support network for students. Both Computer literacy and religious education were traditionally part of the school's curriculum.

Although six areas of learning (Table 6.2) research, religious education, counselling, computer literacy, thinking skills and CASE were set out, the research project was the focus and supported by the remaining five areas. In counselling the pupils were taught study techniques, note-taking techniques, time management, teamwork skills and conflict resolution if there was conflict in the group. One of the purposes of the counselling course was to make sure that the groups were working well together. The chaplain who taught religious education was made aware of the criteria and he tried to fit these into his lessons. In research skills pupils are free to work on their project in their groups – planning, finding information, reading and so on. In the computer skills course the pupils were instructed in how to analyse and present their information using computer programmes. In the CASE lesson problem solving skills using logical thinking were taught.

A conceptual analysis of the integrated curriculum follows.

6.2.3.1 Curriculum Structure

In contrast to the main subject-based programme, the less rigid social structure of the interdisciplinary programme enabled personalised interactions amongst learners and between teachers and students. Firstly, there was weaker classification between subjects. The curriculum content comprised of nine inquiry-based activities or projects that prescribed the use of subject knowledge in an interdisciplinary way. Very weak classification or boundary maintenance between the subjects was intended. Secondly, there was extensive opportunity for choice; students were allowed to choose any two of the nine projects. Students had greater opportunity for individualised interaction and to pursue individualised interests. Thirdly, there were

weaker boundaries between pupils of different ‘abilities’. The integrated programme for the various classes was timetabled concurrently. It was only in those lessons that high and middle and low ‘ability’ groups met and had the opportunity to work together. Pupil grouping was heterogeneous as pupils were allowed to choose whom they would like to work with. Fourthly, weaker classification of space was evident. While the library served as the base for the programme, pupils were free to work in the computer room or in the technology centre if they wanted to.

6.2.3.2 Curriculum Practices

In contrast to the subject-based programme the interdisciplinary programme made a revolutionary break from the teaching of traditional subject knowledge. The topics illustrated how outcomes that are based on an integration of knowledge and understanding from many specialised domains, for example practical and moral judgments that are not possible in an insulated subject-based curriculum could be taught. Table 6.3 and 6.4 illustrate the dichotomy between the two programmes. Each aspect is discursively elaborated on below.

6.2.3.3 What Knowledge Was Taught?

While topics were rooted in three or four traditional school subjects, the nature of the task required pupils to integrate both everyday and subject knowledge from across traditional subject boundaries to solve an authentic ‘real world’ problem. An analysis of each of the nine inquiry-based activities (Table 6.9) shows that pupils were expected to use specialist knowledge from at least three disciplines to resolve the problem set. Project 4 is reproduced verbatim:

You are a world-renowned garden designer who has often appeared on television programmes in which you have created stunning gardens out of areas that were practically wasteland. A famous painter has commissioned you to design a garden which reflects his artistic style and love of colour, will provide a profusion of cut flowers throughout the year, attract birds and will be practical enough to give him a sustainable supply of vegetables. Choose an artist with a distinctive style and use this as the basis of your design. Identify which plants you will use, their Latin, common and Afrikaans/Zulu names, their growing conditions, whether you have the right soil, draw a map design

of the garden to scale and add any embellishments (for example sculptures/constructions) that you feel would enhance the design.

Designing a garden based on ecological principles and reflecting the artistic style of a famous painter required the integration of conceptual knowledge from art, biology, geography and languages. Although the boundaries between the subjects were blurred, the nature of tasks involved the selection of relevant conceptual knowledge from the subjects. Each topic clearly indicated the disciplinary knowledge to be drawn upon, for example:

Project 1: ... the theme of the event is abstract use of colour. This event is being held to celebrate 20th century abstract art particularly the work of Kandinsky and Franz Marcs. You will need to study the work of these artists for your inspiration.

Each project was rooted in daily life and required students to solve a real-life problem such as: design two evening garments, produce a full in-depth report, compile journalistic account, design an ecological artistic garden, plan a protest, plan a theatrical event, design a board game, construct a model house to show insulating properties of various materials, and design a wave generator.

In contrast to the subject based programme where the structure of the subject regulated the hierarchical sequencing of concepts and the vertical integration of meaning, the integrated programme prescribed the selective use of subject knowledge with the selection of knowledge being regulated by an authentic 'real life' problem. Selection of relevant bits of subject knowledge facilitated horizontal integration of subject knowledge to solve a problem.

Social stratification impacted on the stratification of knowledge. Firstly, the projects had clear links with upper and middle class interests. Given the elite social class niche of Rosewood, it was not surprising that the real world contexts selected for each project reflected middle class interests, as is evident in:

- Part of this complex is an entertainment centre which will feature among other things an enormous model wave generator that can be used by surfers, body surfers and boogie board riders.

- You are the director of a theatrical dance company.
- Your family has a lovely beach cottage on the northern coast of KZN near Cape Vidal.
- You are a world-renowned garden designer.

Secondly, there were closer links to the world of high status professional work. Each project required students to role-play high status professional roles, for example, engineer, researcher of insulating properties of materials, designer of board games, director of a theatrical dance company, environmental activist, well-known garden designer, journalist for London News, news reporter for CNN and a fashion designer.

All nine projects required cognitive competences and six required both cognitive and socio-affective competences. Twenty-one outcomes that match closely with C2005 critical and developmental outcomes encouraged a learner-centred and activity-based, collaborative approach to education. Further, the projects required pupils to use creative thinking to solve the problem and it was prescribed that the projects be done in a group of two or three students. Pupils were responsible for managing progress within the time frame set. They were to collect, analyse, organize, synthesise and critically evaluate information in each project. Pupils were required to present their projects using audio-visual media. Other outcomes that were stipulated:

- understood and defined the problem that was set (problem solving, brainstorming, thinking skills),
- organized your information from various sources into a logical order,
- experienced group work,
- communicated the information in a presentation.

The boundary between knowledge, values and action has been softened: Project 4, as we saw above, was underpinned by ecological values. Many of the projects encouraged socio-affective values, for example:

- it is up to you to stop this company from ruining a heritage site,
- plan a protest,
- create a journalistic account in words and pictures of what life has been like for the average British soldier fighting this war in a foreign country.

In contrast to the subject-based programme where conceptual progression generally was from the surface to the deep structures of knowledge progression proceeded from the deep to the surface structure of knowledge, as is evident in the following examples of projects that begin at the deeper, more abstract levels of knowledge.

The theme of the event is abstract use of colour ...to celebrate 20th century abstract art particularly the work of Kandinsky and Franz Marcs. Use what you learn to design two stunning evening garments.

...to bring to the world an understanding of the diversity and richness of South African cultures ...include drama with dialogue, improvisation, historical events, dancing, singing, and music.

Table 6.9 Analyses Of The Nine Interdisciplinary Projects

Proj. No.	Task set	Role played	Subject knowledge required	Skills required	Competences	Complexity
1	Design 2 evening garments	Fashion designer	Art - abstract use of colour and technology	Drawings, material samples, written presentation and oral presentation	CC & SA*	VC*
2	A full in-depth report	News reporter for CNN	Geography – natural disasters and English – use of a specific genre	Gather information, do interviews, use technology	CC & SA	VC
3	Journalistic account	Journalist for London News	History – WW1 and English – use of a specific genre	Empathy, interview, gather information	CC & SA	VC
4	Design a garden	Well-known garden designer	Biology – ecology - a garden that has flowers all the time that will attract birds and a sustainable supply of vegetables. Art – choose an artist as the basis of your design. Geography – map and scale	Soil testing, draw map to scale, choose right plants	CC & SA	VC
5	Plan a protest –	Environmental activist	Biology - ecology, conservation of natural forests. English – letter writing, petitions.	Petition, write letters, meetings, mobilize public support	CC & SA	VC
6	Plan a theatrical event	Director – theatrical dance co.	History – diversity and richness of SA cultures, Art – performing arts. English – dialogue.	Dancing, singing, music, appropriate costumes, dialogue	CC & SA	VC
7	Design a board game	Student	Science – energy sources and conservation and mathematics – organize numbers.	Mathematical	CC	VC
8	Construct a model house to show insulating properties of various materials	Student	Science – insulating properties, geography – use of thermometer, mathematics – measure and record temperature	Use a thermometer, scientific method, draw graphs	CC	VC
9	Design a wave generator	Engineer	Science - waves, technology – design wave generator	Scientific technical skills, model building	CC	C

CC – cognitive competence, SA – socio-affective, C – complex, VC – very complex

The procedures of the subjects were paramount. Pupils were expected to demonstrate that they were using subject procedures. In the mainly science-based project, pupils were directed to formulate questions that could be tested scientifically and to use the scientific method:

... You need to be able to read the thermometer ... heat the house and take measurements inside and outside – then cool the house by insulating it with different materials. Repeat the experiment with the insulated house... formulate questions that can be tested.

To prevent the presentation of common-sense knowledge, a full bibliography was expected. Pupils were urged to find information from many sources such as ‘encyclopaedia/books/magazine/audio-tape/video/CD Rom and the internet’ and to include a full bibliography.

A full bibliography must accompany your end result – even if your presentation is a dramatization/construction/painting/model.

The projects as a whole, enabled pupils to understand the use of disciplinary knowledge in real world contexts. In making disciplinary knowledge subservient to the real world problem, learners were required to bridge the gap between theory and practice and between vertical and horizontal discourses. The completion of tasks required the integration of subject knowledge with real work application of such knowledge. The abstractness of disciplinary knowledge was reduced and enabled access to broad, holistic and worldly knowledge.

6.2.3.4 Pedagogy

6.2.3.4.1 How Taught?

Compared with the subject-based programme, the interdisciplinary programme operated on the lines of an ‘invisible pedagogy’ ‘ordered by a logic of acquisition’ (Bernstein, 1996). The librarian and a biology teacher facilitated the project. At the commencement

of each session, pupils were greeted and simply told to continue with their research projects. Library assistants and two teachers were always at hand to assist pupils in finding the information they required. The facilitators monitored pupil progress and assisted with difficulties individual groups were experiencing.

Each small group worked independently and on different projects. There was never whole group instruction at all. The emphasis was on the process of constructing knowledge. Research skills such as information gathering, doing interviews and experiments, planning and organization, and observation were foregrounded.

Pupils were required to gather, record, collate, analyse, organise and present information. In some of the projects students were required to make models: ‘design a wave generator ... build a model to illustrate your design’.

It was necessary within the context of this school to prescribe restrictions on the use of the Internet sources:

6.2.3.5 Framing Of Knowledge

6.2.3.5.1 Weak Framing Of The Instructional Discourse

Very weak framing was clearly evident. Pupils had greater opportunities to select, sequence, pace and evaluate knowledge. While framing was weaker than in the core curriculum, there were clear criteria as to what knowledge was valued. Each topic clearly indicated what aspects of disciplinary knowledge were to be used. The quotations below indicate that art, geography, history and science were to be used.

Project 1: “... the theme of the event is abstract use of colour. This event is being held to celebrate 20th century abstract art particularly the work of Kandinsky and Franz Marcs. You will need to study the work of these artists for your inspiration.”

Project 2: “Choose your natural disaster and gather information on how this kind

of disaster can occur, whether there is an early warning, what the area looked like before and after, how it will impact on the people who live in the area, can anything be done to prevent it?"

Project 3: "It is 1917 ... there are rumours that the war will be over soon ... what life has been like for the average British soldier fighting this war in a foreign country."

Project 7: "...illustrate the insulating properties of various materials from different energy sources..."

Within the framework set by each project, pupils selected what they thought suitable knowledge from different sources. Recognition rules were implicit and students decided on what was valid knowledge and what was not. In most cases this was done quite arbitrarily. What was difficult for students to comprehend was simply left out. Experts in the 'community' were consulted, for example the girls sought the advice of dressmakers for the project that required two evening garments to be designed. Parents, too, played a greater role in the projects.

Pacing was weaker and invisible. The pupils were much more relaxed and the pace was much slower than in the core curriculum. The due date was set and students were required to have their project complete by the due date set. Although progress was monitored during the research period of when learners met in the library, students were clearly expected to be self-regulating. For example, the librarian remarked on her impressions of progress: "One knows from pupils' responses about how pupils are progressing – some have planned well and are almost finished, while some are way behind".

Students decided on sequencing of knowledge, also. Here too, decisions were quite arbitrary. Students were observed to be reading many selected and printed sources and choosing what they thought relevant.

6.2.3.5.2 Weak Framing Of Regulative Discourse

The framing of hierarchical relations was very weak and not evident. Pupils worked diligently in their groups, independent of teacher control. They displayed sophisticated self-regulation even when teachers were late. In one of the computer lessons where the teacher was late, students were very much self-directed and occupied with different activities such as doing their cover page, information search, word-processing, bibliography, graphic diagrams, reading the programme called ‘cosmopolitan makeover’ and working with their diaries.

6.2.3.6 Assessment

Assessment reflected features of integrated assessment, multiple modes and assessment of social and cognitive competences. The interdisciplinary programme differed markedly from its dominant subject-based counterpart in the criteria and mode of assessment. As in curriculum and pedagogy in evaluation too, pupils were given various kinds of options. Freedom of choice extended to their preferred form of presentation:

The manner in which this project is presented is your decision. For example you may use any of the following methods either in combination or alone: dramatisation/improvisation, poster presentation, drawings/artwork, interviews – video or audio taped, letters/reports/newspaper articles authored by you, models, appropriate music, photographs, maps, data – graphs and slides and sound presentation.

Assessment, with the principal and all Grade 9 teachers present, took place on a Saturday. There were four types of assessment. Subject teachers assessed projects for conceptual subject knowledge, use of subject skills and tools, and subject terminology and language. All teachers assessed each project on general criteria like planning and organization; teamwork; depth of research; use of graphics; use of media; creativity and initiative; presentation skills; and bibliography. Peer assessment involved the pupils assessing the presentation of other groups on criteria such as impact of presentation; depth of research carried out, use of audio-visual technology, interest level, and whether they learned

anything new from the presentation. Self-assessment was also carried out. Each pupil assessed herself on understanding the project, difficulty of researching the topic, keeping a diary and managing time, completion by due date, teamwork, use of AV equipment, and enjoyment in doing the project.

Besides cognitive competences being assessed, socio-affective competences were also assessed, for example, enjoyment of the project, teamwork, time-management, keeping and managing a diary, meeting deadlines, listening to and respecting other ideas, co-operativeness, caring, responsibility, and how pupils ‘got on’ in the group.

Three of the four modes of assessment were of the group, while self-assessment was of the individual student. A rating scale ranging from 1 – 4 was used (level 1 representing 0 – 39%; level 2 representing 40 – 49%; level 3 representing 50 – 69%; and level 4 representing 70 – 100%).

Table 6.10 Summary of types of assessment carried out at Rosewood

Type Of Assessment	Informal	Formal	Done By
Formative	Continuous assessment during LE lessons		LE teacher (program coordinator) and another teacher
Summative		Subject based Overall presentation Peer based Self-assessment	Subject teachers All Grade 9 teachers Each pupil Each pupil

Each form of assessment was done according to specific criteria in keeping with an OBE framework. Informal formative continuous assessment did occur in terms of the progress of the pupils being monitored by the library education teacher and another teacher – this was just to ensure that pupils were making progress and not simply to record marks. The final presentations took place on a Saturday when each presentation was being thoroughly assessed according to multiple criteria by several teachers and pupils.

6.2.3.7 Strong Boundaries Between Subject Teachers Maintained

The programme was designed, implemented and assessed without the weakening of boundaries between the specialist teachers on the staff. They participated independently in the design, support to students and assessment of the interdisciplinary programme, and they did not teach in it. Specialist teachers kept their distance from each other and independently participated in the design of the inter-disciplinary programme. They participated in the design stage by contributing lists of subject concepts and skills expected of their pupils to the steering committee. Similarly, their advice to pupils was offered on an individual basis only. Again in assessment, although all specialist teachers were involved in the assessment of student presentations, each participated independently of other colleagues. Each scored pupil presentations individually on subject knowledge and procedures, and the group on general criteria. School structures that facilitated the co-operative, integrated contribution of teachers of different subjects did not exist.

As shown, integration as a national curriculum policy principle has been interpreted and implemented in a very sophisticated manner at this school. The interdisciplinary programme reflected to a remarkable degree the features of integrated codes theorised by Bernstein. The curriculum structure, knowledge, pedagogy and assessment were designed to facilitate the acquisition of integrated knowledge and understanding that underpin daily practical and moral judgments to be made. Both classification and framing relations had been weakened. Furthermore, learners had greater control over the instructional and regulative discourse. The learning context provided opportunity for students to control their own conduct, manner and behaviour during the lessons. An invisible pedagogy was in use with recognition rules being implicit.

6.2.3.8 Strong Subject-Centred Identities

An analysis of teacher voices showed congruence between what teachers said (their beliefs and values) and what they did in the classroom, and there was remarkable consensus amongst the specialist teachers on the value of a subject-cantered curriculum.

Teachers had very strong subject-based identities and dismissed the idea of subordinating the subjects to Learning Areas. Epistemological factors such as the cognitive norms and values of the subjects were identified by teachers as crucial for maintaining high standards. Mathematics, Geography, Biology and Natural Science teachers felt constrained by the unique, hierarchical knowledge structures and procedures of their subjects and less autonomous than History, English and Art teachers.

Teachers past and current socialization revolved around their subjects. There was no doubt that specialist teachers' conceptual and professional identity as teachers emanated from their specialist subjects. Those involved in the study had an average of five years of tertiary education, with a number having Masters degrees and an average of seventeen years of teaching experience in their subjects. As Bernstein postulated, subject socialisation played and continued to play a large role. Teachers were highly qualified, experienced and committed professionals. Teachers had very clear professional identities developed through stable careers, firstly as students in middle class schools themselves, then as university students and then also as teachers of their subjects. The profile of each teacher presented in the previous chapter showed that teachers had 'favourite' subjects as far back as primary school. In most cases these favourite subjects became the hub of their educational careers. They chose to study them at high school and then at tertiary level. They came to school to teach the subject in which they themselves specialised, and that was naturally their first concern. To them the conceptual content of the subjects was unquestionably the valid knowledge for the curriculum. Their aim was pupils' intellectual enhancement in the subject discipline and with their acquisition of essential concepts, skills, language, values and attitudes of their subject. The large focus on conceptual teaching has been described in the previous section. Their focus was on their subject as theoretical disciplines with central unifying concepts that ought to be taught as the basis of cultivating 'qualities of the mind'. The positional nature of knowledge seemed to be accepted but within the accepted framework of the subjects as objective 'truths'.

Unlike Muir (1980) who found that teachers did not raise questions about the legitimacy of what constitutes knowledge, teachers at this school did reflect on issues around

knowledge. This could be attributed to C2005 advocacy of integrated rather than subject-based curriculum. This was a painful process producing much cognitive dissonance for teachers with some experienced and dedicated teachers being forced to contemplating 'giving up teaching'. Teachers were almost wholly 'subject orientated' and dedicated to their subject. Their subjects provided teachers with a personal anchorage and a sense of who they were and what they stood for. The school supported teachers' loyalty to their subjects. Shirley left her previous school, a public school where history and geography were being integrated, so that she could teach 'proper history' which she was 'really enjoying' at Rosewood.

Strong subject identities of teachers were continuously strengthened and reinforced through active and regular participation in IEB organised subject associations that kept them abreast of changes in the subject at higher levels of thought. At IEB level the insulation between departments was being maintained and there was no evidence of associations that centred around integrated knowledge. Teachers were in touch with changes occurring in their subjects at higher levels of the subject hierarchy. For example, the geography teacher indicated that an IEB conference on teaching Geographical Information Systems in geography was being held, and plans were underway to introduce it to Rosewood pupils.

Allegiance to their subjects, however, could not be simply put down simply to passive socialisation into subject knowledge. Teachers at Rosewood were active in their submission to their disciplines, they viewed their subjects as 'truths' that enabled specialised but deeper understanding of a complex world. The subjects were epistemological entities and not just social entities. To these teachers each form of knowledge was distinct from other forms by virtue of their interrelated concepts and tests for truth. So resistance to integration of the subjects was not just due to subject socialisation or to profane vested interests but emanated from sacred interests and from denying students access to intellectual enhancement in unique and distinct disciplines. As Moore and Young argue, in addition to protecting vested interest, the disciplines provide the standard against which to judge the construction of knowledge. Teachers

identified epistemological factors such as the cognitive norms and values of the subjects as crucial for maintaining and assessing high intellectual standards and were 'not prepared to abandon the high intellectual quality of the learning experience' when subjects were being properly taught.

Teachers candidly 'let off steam' around the well-known implementation problems or the process of the change. These clustered around two factors. Firstly, practical implementation issues such as timetabling difficulties lack of time to plan collaboratively, ownership of the program was a problem and assessment was not clear-cut. Secondly, traditional structures that militated against the change were identified as: the Matric examination that was still subject-cantered; the lack of new textbooks; the lack of clear policy guidelines; teacher training that was biased towards disciplinary specialization; and the lack of exemplars of integrated teaching.

Undoubtedly, the process of change coloured teachers' beliefs and perspectives towards the substance of the change, but teachers strongly resisted the substance of the change for itself. The dominant factor that underpinned their rejection of integration of the whole curriculum appeared to revolve around epistemological issues. Firstly, there was consensus amongst the specialist subject teachers that the disciplines are mutually exclusive.

P1: And that is where I think history and geography don't meet – history is the past and geography is the present and the future – it should be a progression but that's where I think there is a difference in the subjects.

Secondly, some subjects were seen to be more alike than others. The geography teacher thought that geography was more at home with the sciences than with History:

P2: I think that democracy and history would go together and that kind of constitutional stuff is very much history – geography could fit in more with the sciences and we in the past integrated geography more with science and biology than we have ever done with history – and we have taken big projects like we

have taken water and we have looked at river cycles, water quality, chemical properties – quite a lot of geography that will fit more easily into the natural sciences. But I still think you want to retain the value of the subject.

Thirdly, teachers worried that by integrating subjects, pupils would not be able to learn the unique ‘truths’ of each subject, that pupils ‘won’t know whether they are learning history or geography’. Teachers aimed at instilling in pupils a love of each distinct subject.

Fourthly, teachers commented on integration resulting in ‘touching on’ many aspects without achieving in-depth knowledge, and not being able to impart the ‘procedures’ of the subject. This undermined the intellectual rigour associated with subject knowledge with its wide-ranging cognitive content.

P: If you’re watering it down you do overviews and skim over and do overviews, do mind maps and things but when it is taught purely one gets down to understanding process and that’s where thinking comes in to understand and follow through a process – I think that is quite important – and you are not able to spend enough time on that and it is quite superficial in that the topics or areas are very much smaller ...

Fifthly, teachers were clearly resistant to the selective use of knowledge from the disciplines. Their depictions of integrated knowledge were: ‘unrelated bits and pieces’, ‘diluted’, ‘content becomes watered-down’, ‘skating on thin ice’, ‘superficial’, ‘skim over the top rather than do something in depth’. Teachers spoke about the ‘superficial’ nature of the intellectual experience when knowledge was integrated, and that denied pupils insight into the subject:

What scares me is that you are not teaching students to have an insight into something – it’s all superficial and I must admit that there is so much more history than geography in the packages and I have a grave concern about that - they have taken components of geography out and put it into the natural sciences – because there are things essentially about the earth and one needs to study it in context to understand it in context.

The Geography teacher commented on integration resulting in ‘touching on’ many aspects without achieving in-depth knowledge, and not being able to impart the ‘procedures’ of the subject.

P: If you’re watering it down you do overviews and skim over, do mind maps and things but when it is taught purely one gets down to understanding process and that’s where thinking comes in to understand and follow through a process – I think that is quite important – and you are not able to spend enough time on that and it is quite superficial in that the topics or areas are very much smaller ...

Sixthly, the principal and teachers argued that the subjects ask and answer different questions and that it was not possible to integrate the disciplines. The subjects were seen as pieces in a mosaic that emphasised different forms of knowledges for different purposes that together make up a complex whole. Kate for example, thought that students would lose the unique understanding that science teaches ‘how the world works’ for instance. Anyway, according to Kate, students were getting the chance to be ‘creative, expressive and original in drama’ and ‘surely that should be enough’.

Seventhly, teachers admitted their own inadequate understanding of other disciplines to lead pupils to a thorough understanding of their concepts. Many teachers indicated that to teach a subject they were not expert in meant they had to ‘swot’ up the content to be able to teach it, and that affected how comfortable and confident they would feel. They attributed it to insufficient knowledge about integration of disciplines from their own teacher education.

Eighthly, the subjects differed in their malleability - mathematics was regarded as the hardest to integrate with other subjects and real life. The teachers of mathematics, science, biology and geography (taught in specialised sections – geology, climatology, geomorphology) felt constrained by the hierarchical structure of their subjects that influenced strong framing - selection, sequencing, and evaluation greatly. The teachers of these subjects felt less autonomous in selecting, sequencing and assessing knowledge than teachers of English, History and Art. These teachers could include students’ interests to a greater extent.

Ninthly, teachers' intentions were to enable the vertical integration of meaning. The science and mathematics teacher explained that vertical progression and sequencing from basic to complex concepts was achieved better when the subjects were kept pure. The science teacher argued that the hierarchical nature of science knowledge required that basic concepts were taught first and followed by complex concepts.

D: Is there any reason for that ... to keep the subject pure?

K: Yes it's just that we feel that the content is suffering. They won't get the grounding that they would normally in a pure subject.

D: When you say the content will suffer what do you mean?

K: There are certain concepts that we have to teach in science ... we have to start with basics and teach the basics before - until they can reach the outcomes. Let's take electricity and its effect on the environment - hydro-electric power schemes and things like that - I would find it very difficult to teach electricity without having taught the basics about what electrical current is and how it is produced - so we find that we have to develop the basics - the ground rule, and then we will be happy to integrate.

Finally, teachers aimed at instilling in pupils a love of their subjects. They expressed their allegiance to their subjects in terms of their love for History, Science and Biology, and personal reservation towards the other subject with which policy recommended merging, for example: the history specialist remarked 'I hated Geography and now I have to teach it'; and the natural science teacher 'my love is not Biology'.

Of the ten teachers who were part of the Rosewood study, the librarian was the only teacher who was a 'generalist' rather than a 'specialist' in terms of disciplinary identity. The lack of a subject identity enables her to actively promote the programme:

LE: I am not attached to any particular subject and I feel I can branch out in any direction - I can listen to anybody's story and just be a facilitator and not worry about what's going to happen - are they going to take history out of the curriculum, and so on.

Hammerness and Moffett (2000) pointed out clashing beliefs of devotees of subject based and integrated curricula that produced rival groups that referred to each other as 'creeps'

and ‘enemies’. The rivalry between the LE educator and specialist teachers was veiled but present. The LE teacher dismissed specialist teachers’ rejection of radical integration as due to ‘narrow vision’:

I sort of looked at lots of the teachers and said oh-oh we got problems here because everybody is still in the narrow vision and we actually needed to be 360 degrees – it was not happening –

6.2.3.9 Ideologies Of Knowledge

The pervasiveness of purist ideology amongst teachers was clearly evident. All the specialist teachers felt that the purity of the subjects needed to be maintained. Many specialist teachers admitted to being ‘fiercely protective of the knowledge they teach’ and ‘that by integrating subjects too much we are going to lose the purity of the subject’. The specialist teachers at Rosewood study believed, strongly, in the transmission of pure disciplinary knowledge with an emphasis on subject structure and conceptual rigour.

Utilitarianism of both kinds, economic and social Reconstructionist, was almost totally absent in the subject-based curriculum but featured prominently in the integrated programme. Improving and changing society was not a curriculum competence aimed at in formal instruction although such concerns were part of the ethos of the school.

At Grade 9 level teachers are cast as ‘generalists’ rather than specialists. Teachers’ identities at Rosewood, however, were tied up with their specialist subjects. In contrast to policy that projects teachers as key agents in the transformation of South African society, the teachers at Rosewood were devoted to their subjects and to the pedagogical project (Harley & Wedekind, 2004). As has been shown, teachers’ ideologies of knowledge were by-and-large purist, they believed in the virtues of purity and feared ‘the dangers of transgression’. Policy, on the other hand, is based on radical integration, an ideology of social change and the transformation of power relations.

6.3 The Interdisciplinary Program Depended On Discipline Based Direct Instruction

The interdisciplinary programme depended on and complemented the subject centred curriculum. In the first part of this section the dependence of the integrated curricula on the subject based curriculum is discussed. How the integrated curriculum complemented the subject based curriculum is discussed in the second part.

The weaker classification of subjects depended on the strongly classified academic curriculum. Students already had the knowledge resources to draw on, for example, they had studied artists like Kandinsky and colour in art, and plants and soils in biology. The exceptionally weak framing of the instructional discourse was intentional and possible because pupils had already acquired the specialist recognition rule of each subject in the subject-based curriculum. The weaker frames displaced the teacher as transmitter of knowledge and enabled pupils to use electronic media to access knowledge with greater depth and breadth. Although recognition rules were implicit the facilitators made sure that students used the 'correct key words'. The exceptionally weak framing of the regulative discourse was possible because students had internalised the rules of the regulative discourse of the school as well and showed sophisticated forms of self-control. The pupils had imbibed the value of the school having already been socialized into its culture from reception class. The weakly classified and framed integrated context was transformed into a strongly classified and framed context because pupils had already acquired the specialized code in the academic curriculum that regulated social and discursive choices made by students. The selective use of subject knowledge and the selective study of some topics that emphasised some subjects and not others was planned and expected as students were studying the vertical discourses in the subject based curriculum. The major concerns of the teachers and parents that essential subject knowledge and procedures would be compromised were nullified.

6.3.1 The Interdisciplinary Curriculum Complemented The Academic Curriculum

Firstly, the programme illustrated some of the educational merits that accrue from integrated curricula that are weaknesses in a discipline-based curriculum. Peters and Hirst (1973) argue that while the traditional subjects had ‘at times gone some way to prevent an artificial isolation of certain domains’ ... ‘what it has not been able to do so successfully ... is to adequately plan for those educational objectives which of their logical nature demand an integrated approach’ (*idem*:72). They have not been able to provide an ‘adequate education in the making of practical and moral judgments’ like for example in ‘what ought to be done in personal and social affairs’. The personal and social affairs that the projects focused on such as the spectre of war and its effects on women, the issue of ecological degradation, and the devastating impact of natural disasters on people’s lives.

Secondly, some space in an otherwise theoretical and abstract curriculum was created for the application of conceptual knowledge to real world issues.

Thirdly, students demonstrated greater on-line learning and the sense was that they were definitely within the ‘knowledge society’. Students went well beyond the knowledge requirements for Grade 9 and beyond the knowledge taught in the main curriculum.

Fourthly, whereas the subject based curriculum emphasised individual competences the integrated curriculum brought in co-operative processes and products.

Finally, the curriculum illustrated in an embryonic beginning of what Young (1971) describes as the curriculum of the future that requires connectivity across subject matter in order to produce well-rounded and technologically literate learners with economic, political, cultural and sociological understandings.

While the existing structures of school, knowledge, classroom, pedagogy and assessment limit the extent to which students may negotiate these, greater opportunities existed in the interdisciplinary program for negotiating these structures. Traditional hierarchical and ritualised social relations were transformed, pupils were given more status and rights and were seen as knowledgeable. Students were given more opportunity for self-control and to make decisions.

I now move to an interpretation of the curriculum practices of the school.

6.4 Section C Discussion/Interpretation

6.4.1 Introduction

The third phase of analysis according to Thompson (1990) ‘interpretation re-interpretation’, builds on both socio-historical and formal discursive analysis and proceeds by synthesis with the aim of construction of meaning.

The aim in this chapter is to synthesise the results of the socio-historical and discursive analyses for purposes of understanding and explaining the curriculum practices in the school.

Bernstein argues that although the concept ‘classification’ appears to operate in a single dimension, i.e. differences in degrees of insulation between contents; and framing appears to operate in a single dimension, i.e. what may or may not be taught in the pedagogical relationship; both concepts point to power and control components:

Through defining educational codes in terms of the relationship between classification and framing, these two components [power and control] are built into the analysis at all levels. It then becomes possible in one framework to derive a typology of educational codes, to show the interrelationships between organizational and knowledge properties, to move from macro to micro-levels of analysis, to relate the patterns internal to educational institutions to the external social antecedents of such patterns. (Bernstein, 1971:68.)

In the 'pedagogic device' Bernstein (1996) tracks the relay of macro power and control relations from the macro to the micro level. To a large extent this elite school vetoed the relay of macro power relations; and independent school and core regulation surfaced in strong opposition to official pedagogic discourse. Institutional arrangements privileged a strongly classified subject based curriculum structure over an integrated curriculum structure. At Rosewood the strong classification and framing of the dominant subject-based curriculum maximised students' 'chance of entry' to high status fields of study in further education. More, significant, however, was the opportunity to develop the dispositions required of professionals within the integrated code institutionalised within the formal curriculum. Students were given opportunities to 'to be creative and forward looking, to initiate and control rather than be controlled', and to select, sequence, pace and time themselves. Walford (1986) has used Bernstein's theoretical framework to show how 'a balance' between pedagogical codes in British public schooling is conditioned by two goals. Firstly, the strong classification and framing of the curriculum provides learners with 'a high chance of entry' to further education. Secondly, learners are allowed to 'experience elements of weaker classification and framing' mainly through extra-curricular activities and this enables them to 'experience the correct code for their future preferred occupations' as professionals (*idem*:187).

Contextual factors unique to this school that enabled the curriculum structure implemented were the abundance of both material and non-material resources. As has been discussed, teachers were highly qualified and experienced in a variety of disciplines, as noted earlier in this chapter. Just as teachers personified the subjects, the specialist subject rooms completed the picture of treasured uniqueness. All lessons were conducted in well-resourced specialist rooms.

Being an elite independent school, one should expect significant disparities with official curriculum goals. At Rosewood, elite international and national institutions exercised stronger influence than state regulation. The school historically took its cue from the British, especially English education, and symbolically aligned itself with British values.

For example, the school is named after an English ecclesiastic and educationalist; the badge and motto were also borrowed from an English institution. The influence of elite international institutions such as Cambridge University and world-renowned academics who on a regular basis address conferences were influential on the school's curriculum. Other independent schools such as Michaelhouse and Hilton College were also very influential. Insulated subject associations and conferences organised by the IEB played a major role in reinforcing teachers' subject-based identities and served as beacons for the teachers' day-to-day work. Rosewood operated within the confines of the elite class both nationally and internationally.

While one could make the link between the formal curriculum and elitism, the informal curriculum or the school ethos was inclined towards the formation and nurturing of democratic values, multi-culturalism, anti-racism, and a kind and caring attitude to the working classes. Like other independent schools Rosewood had forged and maintained strong links with disadvantaged communities and with under-resourced public schools. The link was based around the provision of materials such as food, toys, clothes, etc. The interaction across classes took place within the context of maintaining the status quo.

Sociologists of education have pointed out the link between curriculum specialisation and social inequality. From a social point-of-view, one could conclude that the strongly classified and framed subject-centred curriculum equipped students with the knowledge and skills necessary for high-status fields of study at tertiary level and through this mechanism, students were indeed being prepared for elite positioning in the elite class.

Brown and Lauder (2004) refer to the need for high-level talent and skill in a post-Fordist society that the school 'produced'. Symbolic rather than practical mastery was aimed at. Individual intellectual, social and personal enhancement was enabled as students experienced social, intellectual and procedural boundaries. Rather than employing 'invisible' pedagogy, teachers made use of explicit visible pedagogic techniques in mediating abstract, complex knowledge in ways that enabled the cognitive construction

of knowledge. Peters and Hirst (1973) succinctly debunk the myth that students would learn such complex knowledge structures without being explicitly taught it:

The notion that by simply living in, and exploring freely, even their social as well as their material context, pupils could acquire the sophisticated, rule-governed principles and procedures we wish them to acquire, for instance when things are correct or incorrect, valid or invalid etc., would be laughable if it were not so frequently assumed. (*idem:77.*)

Another widespread belief is that only working class students require explicit and direct teaching so that they grasp the knowledge being taught, whereas upper class students thrive on 'invisible' pedagogy, proved to be a myth. In this elite school, where probably students may have learnt such knowledge without being explicitly taught, very explicit pedagogy was the norm in the subject-based curriculum.

Rather than celebrate their own local experiences, the vertical knowledge discourses taught formed the basis for constructing 'expert systems' that systematically disembedded individuals from their local experiential world and enabled their inclusion into symbolic systems of thought. The interactions in the classroom as in the entire school were underpinned by love and care. Students were nurtured, protected and provided with enriching experiences to be able to actively construct knowledge. Both strong classification and framing of knowledge were means that facilitated the end of intellectual enhancement. Strong classification was justified in terms of cognitive gains, rich intellectual experiences, and the wide-ranging cognitive content of the subjects that enabled sustained conceptual learning over an extended period of time. Strong framing was justified in terms of extending, modifying and elaborating the cognitive schemata of students. Vocational, social and political goals were subordinate to the supreme goal of 'educating individuals'.

As an independent school not reliant on state subsidy, Rosewood was subjected to minimal external regulation from the state. Being economically independent, the school was to a large extent autonomous and in an economic position to shield itself from broader educational change and to be selective in its implementation of curriculum policy

changes. Even if this were not the case, it could point to its exemplary interdisciplinary programme (notwithstanding its subordination to the subject-based curriculum). The most powerful form of external regulation was undoubtedly somewhat indirect: Rosewood pupils were entered for the school-leavers' and university entrance examination set by the Independent Examination Board (IEB). With the IEB examination still subject-based (as indeed was the school leaving state examination), there was little chance that a school subjected to weak external regulation would align its curriculum with state curriculum policy in a linear way. Contradictory external regulation in the form of Grade 9 national curriculum policy being out of step with the high stakes matriculation examination, provided the legal rationale over and above their own values and ideology for the dominance of the subject-based curriculum.

An attempt in the junior school to integrate the curriculum was met with strong resistance from parents. At a Grade 7 parents' meeting parents expressed disquiet about 'History being taught as Anthropology', as well as pupils' grounding in Mathematics as a discipline being placed in jeopardy. One could conclude that parents were paying high fees for a form of schooling that maximized the chances of success in the high stakes examination upon which rested access to the highest status levels of study in higher education. But the learning experiences of students were far from narrow and oppressively targeted to this end. Such instrumental reasons were only part of the story. Curriculum specialisation accompanied by progressive pedagogy enabled much intellectual growth and enjoyment of lessons. Other reasons were the idyllic physical, social, psychological and intellectual environment that developed a well-rounded individual.

The social class alignment of the school, teachers, parents and students facilitated ideal teaching and learning contexts. With reference to the instructional discourse, the elite social class positioning of students meant that they possessed the necessary cultural and social capital that encouraged meaningful engagement. Bernstein (1971) raised the question of the relationship between the 'uncommonsense knowledge of the school' and the 'commonsense, everyday community knowledge of the pupil, his family and his peer

group'. While strong boundaries were in place at Rosewood the 'images' and 'acoustics' reflected by the school were easily recognised by students. There was close correlation between school knowledge and the background knowledge of the pupil. This enabled acquisition of the complex linguistic structures, abstract conceptual knowledge of science and mathematics and the specialised languages of the arts. With reference to the regulative discourse, students had interiorised the coding orientations and routines of the school. With misunderstanding and contestation absent, all instructional time was devoted to instructional discourses. The snowball effect was the rapid pacing of knowledge.

Operating as a relatively closed system within the ambit of the elite class, an elite independent school normally subjects its teachers to powerful internal regulation. However, in the case of Rosewood, close social class alignment of school management with its staff and parent body meant that consensus made internal regulation somewhat redundant. To extend Bernstein's term for pedagogy to a different domain, internal regulation was 'invisible'. School regulation placed high premium on academic knowledge and skills. The view that the disciplines operated under fundamentally different and incommensurable epistemological assumptions seemed to be unanimous amongst specialist teachers, HODs and the principal. As a mathematics specialist, the principal expressed the firm non-negotiable view that 'the disciplines can't be integrated' because they were 'unique ways of thinking'. Teachers as subject specialists rationalised their strong purist ideologies on epistemological grounds.

The school was committed to academic excellence and to ensuring the personal growth of individual pupils. The curriculum was broad and offered a wide choice of languages, sciences, and humanities, cultural and commercial subjects provided by experienced and innovative teachers. The full potential of students in academic, sporting, cultural, social and spiritual spheres was being developed. The formal curriculum and the ethos of the school catered for differing interests, aptitudes and abilities. Tolerance and democratic values were cherished. There were ample opportunities for students to think critically and creatively, to judge, analyse and arrive at informed opinions. Sensitivity to cultural

differences and diversity in a multi-cultural society were part of the ethos of the school. A structured and comprehensive Thinking Skills Course provided for the development and encouragement of creative, critical, divergent and flexible thinking.

Small class sizes, pupils who were self-regulating and motivated to learn, excellent resources, the expertise and experience of teachers, combined to form ideal teaching and learning environments.

Consistent with the strongly classified dominant subject-based programme, teachers had very clear personal and professional identities. Most of the teachers had attended high schools that could be described as privileged with five having attended highly reputed ex-Model C schools themselves and one a private school. Table 6.1 shows very close correlation between favourite subjects as school pupils, major subjects at tertiary level and teaching subjects at school for eight out of the ten teachers. There was a smooth progression through stable and strong socialization into subject-based identities first at school level, then into major subjects at tertiary level and then teaching their subjects for up to 30 years. Nine of the ten teachers in the Rosewood study believed, strongly, in the transmission of pure disciplinary knowledge with an emphasis on subject structure and conceptual rigour. For these teachers, school subject knowledge was like the parent discipline itself, a body of formal, pure, abstract knowledge and skills. Their focus was on their subject as a theoretical discipline with central unifying concepts. Their pedagogic strategies far from being 'invisible' or 'implicit' were systematic and deliberately aimed at intellectual enhancement in the subject discipline.

The HOD (academic matters) identified imposing structural impediments that diverted attention from the mainstream development of integrated knowledge. She cited: the 'matriculation' exams, the time-table, lack of continuity across Grade 9 to 12, teacher-training, the requirements of reports, lack of time for planning and organization, and the lack of suitable textbooks. The structure of the examination had a determining effect on the knowledge taught. Teachers taught to meet the demands of the final high-stakes

matriculation examination. In the overall scheme the Grade 9 aim was to lay the foundations or teach the basic knowledge to be built on in Grade 10.

The interdisciplinary program, being symbolically and substantially subordinate to the academic subject-based curriculum, was a strategic concession to policy. Although the curriculum, pedagogy and assessment structure were radically different from the disciplinary programme, its subordinate status allowed it to be subsumed by the dominant specialist code.

On the whole, the specialist code and specialist discourses and procedures were transmitted and social, intellectual and procedural boundaries were strongly maintained. Strong boundary maintenance, the hallmark of the school, was reinforced through the structuring of educational knowledge and the organization of social relationships. The subject-based programme was marked by strong classification and framing, vertical conceptual progression and integration of meaning. Teachers and students had little or no option to select, sequence, pace and evaluate knowledge – the structures of the disciplines determined selection, sequencing and progression.

The rigidity of the subject-based programme was balanced by the inter-disciplinary program that was characterized by weaker classification and framing, a balance between vertical progression and horizontal integration, students had ‘real’ opportunities to select, sequence, pace and evaluate knowledge, and had a range of options from which to choose what to study, how, with whom, where, when, how to present, what media to use and to assess themselves and their peers. Even in this programme teachers’ strong subject-based identities were steadfast in regulating teacher interaction and participation.

The decision to offer a twin-stream curriculum comprising of both collection and integrated codes was an informed, conscious, rational and reflexive one. It was a clear, rational assessment of different forces at play – identification with elite international institutions, solidarity with other elite independent schools, the demand of the matriculation examination, policy imperatives, personal ideologies and philosophies,

contextual realities and parent demands. The curriculum practices of the school were aligned to the interests of the elite class who also happened to be mainly White.

In summing up the school, theoretical and official discourses are synthesised. The concepts classification and framing enabled an accurate description and interpretation of the curriculum practices and teacher identities at Rosewood that was homogeneous in race, class and gender terms. The elite social class alignment of parents, teachers and students, the wealth of resources, highly qualified teachers and the specialisation of roles provided ideal teaching and learning conditions. Teachers' strong modernist subject-centred identities flourished as the school and parents valued traditional academic subject knowledge. The strong classification and framing of knowledge accompanied by progressive learner-centred pedagogy served the ends of intellectual enhancement, inclusion and participation in socially valued and rewarded forms of knowledge. There was no doubt that students were being groomed for 'self-programmable' or post-Fordist high level talent and skill. Students were inducted into specialised discourses as 'pure truths' devoid of power and authority and race, class and gender biases. The strong links with disadvantaged communities enabled students to understand themselves as benevolent. The elitism characterising the school, made possible by the high school fees filtering out the majority, and the curriculum that enabled epistemological access into a variety of distinct forms of knowledge was instrumental in insulating students from an awareness of the unequal nature of South African society. The integrated programme and the democratic values that characterised the ethos of the school were tolerable in so far as they remained outside what was sacred - pure subject knowledge – and were seen as noble concessions that ought to be appreciated. Thus, while humanistic traits were rewarded, the most prestigious awards were the subject awards. The school aligned itself with elite interests in the country and internationally, and selectively with the South Africa's official curriculum discourse.

6.5 Conclusion

Bernstein's language of description was useful for describing the twin-stream curriculum at the elite independent school characterised by modern organisational arrangements; highly qualified teachers; homogeneous race, class and gender constituencies; historical stability; and the wealth of resources. Each stream of the curriculum reflected, in an almost ideal-typical way, the expectations of the concepts of collection and integrated codes. Teacher identity did play a large part in the entrenchment of the collection code and in a concession to the integrated code. In conflict with the theory that postulates a change in code based on changes in society in this school, both codes operated in the same school with the integrated code dependent on and complementing the collection code.

While national integration of subjects resulted in 8 learning areas the attempt to balance both core disciplines and integration at Rosewood resulted in pupils taking 14 subjects in the main curriculum and six areas in the integrated programme. In relation to policy, the subject-based curriculum structure that was subordinated in favour of radical integration, in the introduction and promotion of the new C2005 enabled epistemological access to a variety of traditional, specialised socially valued discourses that insulated students from a true understanding of South African society. At the same time, the subordinate integrated curriculum was a highly sophisticated programme that embodied some of the principles of C2005, but still excluded its social and political goals.

The twin-stream curriculum pattern reflected a particular distribution of power. Other than its own national examination body, Rosewood was subjected to minimal external regulation. Consensus regarding the definition of purposes of schooling on the part of school management, teachers and parents, made internal regulation a non-issue. Teachers' core identities were part and parcel of this consensus.

At one level, it could be argued that Rosewood pupils enjoyed the best of both worlds. In one curriculum world, they had the benefit of subject-based curriculum tailored to the

requirements for success in a high stakes school leaving examination. In the other curriculum world, they had the advantage of experiencing the opportunity of taking control of their own learning in an exceptionally well planned, resourced and weakly classified and framed interdisciplinary programme.

This programme reflected some of the characteristics of exemplary interdisciplinary work that could be done in a school without undermining an academic curriculum. The strong foundation of discipline-based direct instruction facilitated intellectual development; the supported cooperative integrated learning projects facilitated integrated but not political outcomes; and the self-directed inquiry based knowledge construction, resulted in an authentic and rigorous curriculum that overall facilitated the acquisition of post-Fordist knowledge and skills. This case showed that the integrated curriculum contributed to a holistic, authentic, relevant and academically rigorous curriculum in the school.

At a broader national level, the picture might be more troubling if one questions the dominance of 'internal' or cognitive interests at the expense of 'external' national or social interests. There was little or no recognition on the part of teachers that school subjects might be social constructions that reflected race, class and gender biases: to them the cognitive and intellectual value of the subjects was a self evident virtue. In a world where ethno-centricism has been challenged one concern is the lack of wider multi-cultural perspectives in the curriculum. In the school's own terms, however, it was responsive to its parent community, and it believed it had 'higher standards than policy demands.' It certainly produced excellent results in that public barometer of success, the IEB examination.

More substantively, the case of the Rosewood curriculum has clear implications for understanding educational change (or non-change) in a society in which curriculum policy had been conceived and formulated as an overt instrument of social and political transformation.

Overall, it has been shown that even in a setting within which an interesting compromise is offered to the integrated knowledge code enshrined in national policy, this school supports Bernstein's (2000) theory that elite institutions are not readily vulnerable to new diverse forms of knowledge. When diverse new forms of knowledge are central to a national curriculum aimed instrumentally at social transformation, the resilience of elite schools to such forms of knowledge dominating the curriculum has implications for social reproduction.

CHAPTER 7

THE EX-MODEL C SCHOOL - FERNHILL

This chapter presents the findings of the former white advantaged school, referred to as Fernhill, in three sections. Section A presents a socio-historical analysis. Section B presents a formal-discursive analysis and Section C presents an interpretation re-interpretation of the curricular practices in the school.

7.1 Section A Socio-Historical Analysis

This advantaged former White Model C School was established for White boys in 1960 by the Natal Education Department the former provincial education department for White education in Natal. It is now a public school under the KZN Department of Education. The school stands in approximately 4 hectares of playing fields and gardens and is situated close to a well-known park, a huge sports stadium, a police station, a university and a shopping mall. It is situated in a middle-class former White residential area about two kilometres from central town. The school had an attractive and pleasant appearance.

The entrance hall of the main reception area was aesthetically decorated with memorabilia from the school's history, photographs of important past figures, plants, beautiful curtains and a small reception area for parents waiting to see the principal. The administration block was large. It contained an opulent office for the principal, two offices for the two deputy principals, five offices for administration, a filing room, a duplicating room and a large hall for whole school functions. The front offices of the principal and deputy principal were plush and attractive. The principal's office was out of bounds for most of the school staff and students – in my stay at the school I was 'fortunate' to go into it on my last day at the school.

In 1966 the boarding establishment was built and had accommodation for 120 male students and several resident staff. At the time of the study, 32 boys were accommodated in the boarding establishment. This according to a former principal had strongly affected the ability of the staff to foster a desired identity for the school.

By 2003 much transformation had taken place. The first African boy was admitted in June 1991. In the beginning of 1992 the school became co-educational. Racially, the student population reflected the demographic diversity of the country's population. There were a total of 210 students in Grade 9 in 2003, of whom 84% were Black, 11% White, 4% Coloured and 1% Indian. Sixty-seven percent of the students were male. The first and easiest level of integration, racial desegregation, had been achieved with regard to student population and the school had gone a long way in racially desegregating level one educators as well.

Table 7.1 Racial Compositions Of The Staff

Race	White	Non-White	Total
Principal	1	0	1
Senior management	3	0	3
Level two HOD	9	2	11
Level one teachers	15	16	31
Clerical	9	1	10
PRO and marketing	1	0	1
Total	38	19	57

In contrast to the independent school, a high degree of diversity characterised Fernhill. The staff was racially diverse although the majority were still White. Of 57 staff members, 38 were White and 18 were Non-White. White personnel dominated the management positions. The principal and two deputy principals were White. Racial desegregation was minimal at level 2 educator-level; not achieved at all at middle and senior management level. Of 11 Heads of Department, nine were White and the remaining two were Indian. The high number of HODs meant that there were about three teachers for each HOD to supervise. Of the 31 level one teachers, 15 were White and 16 were Non-White. The 16 Non-White staff was made up of seven Indians, two Coloureds and seven Blacks. Management staff was mostly White with a few Indian members.

Five Black teachers had been hired to teach Zulu, one taught PE and another taught History. The Indian teachers taught a wider range of subjects – Afrikaans, English, Accounting and Science.

The frontline administrative staff and support staff were also predominantly White. Unlike the academic staff who were friendly and warm, the administrative personnel were brusque, and appeared to be unhelpful and dismissive of African students, visitors and parents.

Teachers were affiliated to both major teacher unions in the country, the South African Democratic Teachers' Union and the former White dominated Association of Professional Educators. The second level of integration, staffing integration, was not evident. The group of Black teachers occupied a section of the staff-room and were basically alienated from decision-making to do with school matters.

The Black students at Fernhill personified 'a new generation' the first to come of age in a democratic nation. They were street-wise, intelligent, outspoken, politically aware, empowered by the human rights discourse, took independent initiative and were highly motivated. They came to school regularly and up to the last day. They had no qualms about challenging their teachers and asserting their collective power to control teachers. Very proficient and highly qualified teachers who resorted to outdated insults and punishment to control students did not survive. The students were very fluent in the English language, had an Anglo-centric accent, and were often much more proficient in the English language than their Black teachers. Students often ridiculed these teachers' pronunciation and language use. A few White students had become conversant in Zulu and often used it to communicate with their Black peers.

The students came from a very diverse socio-economic background. Fifty-three percent of the students lived in low-income socio-economic communities. These students commuted from surrounding Black townships and other low socio-economic previously White residential areas. The majority of these students commuted to school by public

transport. Thirty-three percent of the students came from lower middle socio-economic residential areas. Seven percent came from upper middle socio-economic areas like Pelham and Cleland and seven percent came from upper socio-economic areas like Hayfields, Wembley and Scottsville.

With reference to parent occupations, four % of the parents were senior professional and managerial; 51% were lower professional and junior managerial; 29% were clerical and skilled manual workers; 12% were semi-skilled manual workers; and 6% were unskilled manual workers.

Keeping and managing discipline and control was a crucial and time-consuming part of the school. One of the senior teachers was appointed to oversee discipline matters. It was his task to follow up on defaulters. He enjoyed this task and spoke about working with the police to identify and discipline offenders. In disciplining students the school subscribed to two principles 'fairness' and 'dignity'. Teachers gave students detention for misdemeanours like disrupting class, swearing, back chatting, and smoking. Each time a detention was given, detention slips were filled in and handed to the student. Teachers then recorded the names of defaulters in the detention book that was taken by a secretary and typed into the computer. Students were detained for one hour after school. Teachers took turns to sit with students in the detention period.

There were various reasons for the lack of control in the school. Staff turnover was extraordinarily high amongst new staff members. It was said that newcomers 'either hated or loved Fernhill' and thus left quickly or stayed on. This was true to a large extent, the atmosphere at the school was vibrant and the students were their 'own persons'. Some classes who were reputed to be uncontrollable were taught the same subject by as many as five new teachers for the year. Four permanent teachers had resigned at the end of the year. Most of them were very competent and committed teachers, but had been disillusioned by the behaviour of students, whom they described as very antagonistic, egocentric, rude and obstructive of teaching. A former principal of the school confessed that he used to enjoy teaching at the school but could not adapt to the 'constant chatter'

that the students engaged in. The school's management team viewed discipline and control in each teacher's classroom as that teacher's individual responsibility. Female teachers had greater difficulty than male teachers – this stemmed from students' sexist attitudes. Students seemed to behave impeccably with some teachers who were autocratic. Teachers who had difficulty controlling students and get some teaching done gave up and eventually resigned or moved to other schools. During a recent visit this year, a senior teacher mentioned that 'good' teachers were leaving and were being replaced by 'less committed' teachers.

Theft was a serious problem in the school. Prospective parents were warned beforehand that the school could accept no responsibility for the theft or loss of student's property. Parents were advised to insure valuable items such as bicycles so that replacement was possible in the event of loss. From the appearance of the students it seemed as if substance abuse was rife as well. Some students, especially after lunch, visibly appeared to be under the influence of intoxicants.

Some students were themselves quite concerned about the behaviour problems such as theft, lying, disrupting classes and substance abuse. One of the top three students in Grade 9 indicated that he was going to another school in the area where there were better conditions. The trend of 'good' students leaving the school seemed to have become established.

The self-management principle was being implemented in many facets. Democratic decision making structures had been established. The schools code of conduct had been drawn up in accordance with the Constitution of South Africa, the Bill of Rights, the SASA and KZN Schools Education Act and was approved by the staff, representative council of students and governing body. The Governing Body determined the school's financial policy and was advised by the schools Finance sub-committee on which the teaching staff and parent community were represented. The SGB was set up in accordance with state requirements as the 'principal strictly kept to the letter of the law'. The composition of the governing body was not proportionate to the racial composition

of the students. Eighty percent of the governing body were White, the chairperson was a White male and White and Indian parents were more highly represented. Of the total number of parents, just three parents who were White or Indian actively participated. The governing body rarely challenged decisions taken by the school staff. The one case where they did challenge was to do with raising the school fees so that the school could employ more governing body teachers. The governing body members experienced much difficulty in fulfilling their responsibilities as they were employed and had to take leave to attend to their governing body duties, such as interviewing new staff for posts in the school. The governing body made no input when it came to curriculum matters. The SGB drew up the school's admission policy in terms of state regulations. The medium of instruction was English and to be admitted the student was required showing sufficient proficiency in the language. English teachers interviewed students before they could be admitted to the school. The school was Christian in character and all students were expected to respect this character. The parents and children were expected to adhere to the school's code of conduct and rules.

Although many opportunities existed for parents to participate in the life of the school, parental participation was minimal and seen as a serious problem. Generally, at academic functions there was an 'excellent turnout' of parents. According to an HOD the minimal participation was due to 'parents being enormously grateful to the school' and to 'trusting' the teachers and to feeling that 'they didn't need to do anything more'. Parents also did not have time to get involved as the majority were working. The school saw the minimal participation of parents as one of their weaknesses that they had not been able to overcome. My observations at the senior prize-giving celebration indicated that parents did not feel part of the school community at all. The core student leaders at the L'Abri leadership course spoke about the need to enable greater parent participation in the school.

What did the institutional culture of the school say about 'just whose school was it?' In terms of pinning down the illusive notion of institutional culture, Jansen's (2004) list in decoding institutional culture is informative. Despite the overhaul in its student

population the institutional culture of the school by 2003 still projected many Anglo-centric or South African White symbols. The five sports houses that were named after key historical figures, all White, remained the same. The symbol of each house flag that were derived from symbols personally relevant to each of these individuals, remained the same. The portraits and paintings of key historical figures that hung in the corridors were bold statements of the school's history rather than a reflection of its present orientation. The school's governing body was dominated by White parents. The English language dominated public meetings and events, although the majority of parents in attendance were African. All signage at the school was in English. Daily talk showed considerable positioning of students as 'other'. Adversative pronouns, conjunctions, metaphors, and vocabulary were often used.

The school uniform had remained the same as for the previous body of students. The school was very strict about the uniform for students and defaulters were immediately dealt with. Different summer and winter uniforms were specified. The school expected that the school uniform be worn with pride and that students looked neat and presentable at all times, especially in public. Students were expected to be extra careful about their behaviour when in uniform in public. The school punished students who smoked in public while in school uniform.

The school boasted a 100% Matric pass rate until 2001 when 12 matriculants failed. The staff was pleasantly surprised with a better pass rate of 99% in 2003. The 2004 Matric pass rates were also good: of 185 Matric students, 96% passed. The quality of the passes had improved substantially with 51% passing with Matric exemption.

Tuition fees for day scholars were R6 300 per annum and boarding fees were R3 300 per annum. Students were also expected to pay subject fees in subjects such as Home Economics and Art. Students purchased their own stationery and textbooks. The school provided some textbooks, especially in the languages. Fees were payable in advance and the school took legal steps to recover fees (with interest) from non-payers.

The large number of support staff enabled specialization of roles. There were 13 support staff – five secretaries, one ground staff, one technician, four cleaning staff, one security staff and a library assistant. The school was able to offset the full impact of state rationalisation and restructuring by employing 15 governing body teachers and sufficient support staff. This made teaching loads much lighter than would otherwise be the case. The teacher-pupil ratio was 1:36. All level 1 teachers had at least one non-teaching period (NTP) every day and eight NTPs in a cycle of eight days. Level 2 teachers had at least two NTPs a day and 16 in a cycle of eight days. The school bursar took care of financial matters. Teachers were assisted with the typing of papers and with many clerical tasks.

The ongoing state rationalisation and restructuring that annually declared the number of teachers that were in excess at the school, was used by the school to ‘work out’ teachers whom they considered problematic. The fifteen governing body teachers were employed by the school’s SGB and had no tenure. This greatly reduced the possibility of teachers criticising the management of the school or suggesting changes that were contrary to the dominant ethos.

The staff were committed to providing a high quality of education for their students. There was a good measure of collaboration amongst the members of some departments. Discussions often centred around work programmes for different grades. When the final exams commenced in November 2002 the whole management team was involved in a two-day planning meeting around aspects like professional development of the staff as well as planning for the next year.

Ostensibly open communication across and down the hierarchy from principal to level one teacher was encouraged. The principal would often sit amongst level one teachers during the lunch break.

Teachers were at school by 7:30 and punctually attended the morning meeting at 7:40. At these meetings the principal addressed the staff on aspects such as the departmental

circulars (which were filed and kept in the staff-room), litter in the school, the sloppiness in the attire of students, and the morale or mood of teachers. Each DP then followed on the principal and informed the teachers of defaulters amongst junior and senior students. HODs then made their contribution. Teachers also contributed with regard to sporting arrangements or events that would interrupt other teachers' timetable for the day.

On Wednesday and Friday the school day ended at 1:30pm. This was to enable subject or grade meetings on Wednesday and full staff meetings on Friday. I attended Grade 9 register teachers' meetings chaired by the grade HOD. Discipline problems or misdemeanours of pupils dominated the discussion. At the final meeting for the year, computer generated cumulative demerit records per student were handed out to the register teachers to be posted together with students' reports to parents.

The school was abundantly resourced. The staff room had 3 computers and a printer for staff use. All staff members had access to Internet and e-mail. There was open and unlimited access to the photocopier to photocopy worksheets. Each department had a code that was used by teachers to operate the photocopying machines. The 'zerox curriculum' was very much established at the school. Textbooks were hardly ever used.

The school had a number of well-equipped specialist rooms: technical drawing, home economics, team teaching room (a large room with furniture suited for group work), a hall, a speech and drama room, three science laboratories, a large library, an English book room, a committee room where meetings were held, a computer room with up-to-date computers and teaching resources, an art room, a girls' change room, a gym and a number of store rooms. In all there were 35 general classrooms.

All classes were connected by an intercom/public address system that was controlled from the office. All students were addressed by one of the deputy principals via the intercom each morning before the first lesson and informed about batting (supervision of absent teachers' classes) and sports arrangements for the day. Announcements were also

made during the day. Defaulters were summoned promptly to the front office via the intercom.

The school offered a broad, holistic and balanced curriculum comprised of academic, sporting and cultural programmes with ample opportunities for students to participate and excel in all spheres. Planning for the extra mural programme was done at the end of the year for the next year. Both staff and professional coaching was available at the school. Staff were offered an incentive bonus if they did more sports duty than the expected minimum which was two afternoons a week.

Students were encouraged to involve themselves in at least one sports code each quarter. The school was well served by extensive grounds and sports facilities. The school offered cricket, basketball, swimming, water polo, squash, tennis, athletics, indoor hockey, field hockey, rugby, cross-country running, netball, and soccer. Teams also participated in cycling events, bi- and tri-athlons and polo-crosse tournaments.

Cultural activities also featured in the school's life. Many students were involved in the catering club, an annual supper theatre (supper and a show), a choir, debating teams, speakers' club, chess, computer club, and art club. Students' interest in wildlife and conservation, pottery, woodwork and photography was developed. The Students' Christian Association enjoyed the active support of many students. The school had a First Aid Unit that was on duty during all matches.

In addition there were many extra-curricular activities and contests that had a more direct bearing on the academic curriculum. Among these were national bridge building competitions, Olympiads, the Junior Achiever Programme, and pupils represented the school on the junior city council. Students in Grade 11 attended leadership courses that focused on the development of leadership, self-knowledge and inter-personal relations. Students in each grade were represented by an elected student on the RCL. This aimed at giving the students an opportunity in determining directions for the school.

The counselling department offered group and individual counselling. Students were counselled in areas of adolescent and academic development such as subject selection, study skills, careers, tertiary opportunities and bursaries, goal setting and other personal life skills. Students in Grade 11 were encouraged to arrange practical work experience for themselves. The education for living programme ensured that students had the opportunities of learning about and addressing the many social pressures and problems that faced them or would challenge them in the future.

Students had a variety of opportunities to develop their leadership skills. Selected students from Grade 11 were taken to participate in leadership programmes such as L'Abri at the school's cost. This group of students was groomed to assist in leadership in the school. From this unit the head and deputy boy and girl were chosen. At the last leadership course students discussed the strengths and weaknesses of the school and came up with a summary of what they considered characteristics of a "sick" school and a "well" school. Amongst "sick" characteristics students mentioned the discipline problem at the school and the lack of parental participation. Students were very appreciative of the 'kindness, love and care' shown to them by the staff and saw this as one of the strengths of the school.

Students were elected as representatives to the school council who represented the school to the headmaster and at governing body meetings. All Matric students were regarded as "prefects" when they were given the opportunity to practise their leadership potential. Outstanding leaders were acknowledged with a leadership award. The head and deputy head boy and girl co-ordinated the Matric group.

The school participated in community outreach. One such project was the 'Sinathing' project on the development of rural schools. The school had organized funding from overseas for rural schools development. The school annually took cakes made by the Home Economics department to 'Lily of the Valley', which was a home for AIDS orphans.

In the section that follows the professional biographical details of the teachers in the study are discussed. Although just eight teachers filled in the questionnaire that required professional biographical details their details reflect the diversity amongst the staff of the school quite closely. Table 7.2 tabulates the details of the eight teachers who completed the questionnaire.

Table 7.2 Fernhill Sample Teacher Profile

Criteria	Teacher 1	Teacher 2	Teacher 3	Teacher 4	Teacher 5	Teacher 6	Teacher 7	Teacher 8
Age	30 – 39	25 – 29	25 - 29	40-49	20-25	45-50	45-50	30-35
Gender	F	F	F	M	F	F	F	M
FT / PT	F/T	F/T	F/T	F/T	F/T	F/T	F/T	F/T
Rank	L1	L1	L1	L1	L1	L2	L1	L1
First Language	E	E	A	E	E	E	A	Z
Experience (Years)	5	7	University lecturer 2 years	18	1	12	20	8
School attended*	Overport Secondary	Dundee Secondary	Vryburg High	Woodlands Secondary	St John's DSG	Rodean Senior School	Newcastle High	Umthoqotho High School
Favourite Subject/s	Physical Sc. & Maths	Languages	English & Geography	English History	English History	English	Biology Physical Sc.	History
Qualifications	Bask & HED	B.A. & HDE	B.A., HDE, Hons. M.A. Com	JSED HDE	B.A., HDE, BA Hons. English	B.A., HDE, B.Ed. Hons.	BSc., HDE, B.Ed.	B.A., HDE, B.Ed Hons.
Major Subjects	Maths Microbiology Biochemistry	English, Afrikaans, Zulu	English Library Sc. Afrikaans	English Afrikaans	English Counselling	English. Political Sc.	Botany Biochemistry	History English
Teaching Subjects	Biology General science	Afrikaans	English	English	English	English	Physical Sc. Biology	HSS, History
Subject committee	Grade committee	Grade committee	None	English	None	English	Natural Sc.	History cluster
Tertiary Institution	UNP* UNISA**	UNP	University of the Free State	Springfield College	UNISA	UNP	University of Free State, UNISA	UNP

* University of Natal – Pietermaritzburg, ** University of South Africa

The racial composition of the staff differed greatly from Rosewood. Of the eight teachers, three were White, four were Indian and one was Black. Most of the teachers in the school, as well as in the sample of Grade 9 teachers, were female. All were full-time teachers and in 'permanent' positions. There was greater diversity with reference to the first languages of teachers. Five of the eight were English first language speakers, two were Afrikaans first language speakers and one had Zulu as first language. The principal, and both deputy principals were Afrikaans first language speakers. The teaching experience of the eight teachers differed from one to twenty years whereas in the whole school the range was even greater, from first year to close onto retirement. Very young teachers fresh out of university mingled with much older teachers close to retirement. Most of the teachers had attended high schools that could be described as privileged, with one having attended an elite independent school, three ex-HOA schools, and three ex-HOD schools. Only the History teacher had attended an ex-DET school.

There were many similarities between the Rosewood teachers and the teachers at Fernhill. As at Rosewood, the teachers at Fernhill were all highly qualified. Those involved in the study had an average of five years of tertiary education. Of the eight teachers who completed their questionnaires, five were post-graduates, two were graduates and one had a diploma. It was school policy to employ graduates only. All teachers were teaching subjects they had specialised in. Seven of the eight teachers had a university education. The teachers at Fernhill had a high level of expertise in the Sciences and Arts. Two teachers had the BSc. degree and majored in Mathematics, Microbiology, Biochemistry and Botany. Five teachers held BA degrees and Honours degrees in Education, English and Communication. Major subjects studied at university level included History, English, Political Science, Zulu and Afrikaans.

Similar to Rosewood, Table 7.2 shows very close correlation between favourite subjects as school pupils, major subjects at tertiary level and teaching subjects at school for all eight teachers. There was a smooth progression through stable and strong socialization into subject-based identities first at school level, then into major subjects at tertiary level and then teaching their subjects for up to 20 years. For example, teacher 7 indicated that Biology and Physical Science were her favourite

subjects. She majored in Botany and Biochemistry and was teaching Biology and Physical Science.

As at Rosewood, the teachers' loyalty to specific subjects went back to their own school days. All valued the subjects for their intrinsic worth. In explaining why subjects became 'favourites' for them as school pupils themselves, teachers provided a variety of intrinsic reasons such as 'passion for literature', 'love of literature,' 'love for reading', 'interesting' and 'challenging'. Teachers wanted their students to 'love' the subject too. In responding to the question, 'what are your main goals as a teacher?' one of the English teachers responded:

To create a love for the language and for reading ... I want to make a difference in the way they see and understand the subject and give them something of the beauty and joy that the subject provides me with.

7.2 Section B Curriculum Practices

7.2.1 Introduction

The socio-historical analysis of the school indicated its beginning in politically structured raced, classed and gendered privilege. In contrast, the current school context characterised by the high degree of race, class and gender diversity has also been described in the previous. This school had most of the ingredients to undertake curriculum change and development. As the socio-historical analysis showed, it was a very well managed modern institution that offered an enriching curricular and extra-curricula programme. The school had a wealth of material and non-material resources. School management was favourably disposed to change, and well informed on curriculum policy and school governance. All teachers were highly qualified subject-specialists with professional dispositions and were committed to seeing students making progress in their subjects. The curriculum structure was complex and offered students a wide diversity of subjects and areas of study. The fifteen governing body appointed teachers and HODs offset the negative impact of state restructuring and rationalisation on workloads to a large extent. The large

number of support staff took care of technical, financial and clerical matters and freed more time for teachers to focus on academic matters such as planning, teaching and evaluating students' work. Students were politically empowered and spoke English fluently. With these essential pieces in place one would expect teaching and learning to proceed smoothly, but did not most of the time as teachers battled to assert their authority and control over students. Students, unlike many of their teachers who were 'frustrated', generally appeared to be happy and enjoying school.

The analysis that follows has five sections: firstly, a formal or discursive analysis and interpretation of the curriculum structure, knowledge taught, pedagogy and assessment practices are done. Secondly, a discussion of teachers' identities follows. Thirdly, a re-interpretation based on the socio-historical and formal-discursive analysis is done. Fourthly, picking up what was thought to be significant issues in the school concludes the chapter.

7.2.2 Curriculum Structure

Fernhill, like the elite school in the study, had a complex curriculum structure in terms of number, status and diversity of subjects and areas of study offered. Of a total of seventeen subjects offered (see Table 7.4), students were compelled to take 16 subjects.

Table: 7.3 Summary Of Curriculum Structure Of Fernhill

Criteria	Actual curriculum
Curriculum content	16 subjects and LAs
Status	Distinct hierarchy of higher and lower status subjects
Timetabling	Rigid
Regulation: Curriculum structure Curriculum practices	Management Individual teachers
Pupil grouping	Homogeneous ability groups
Pupil choice	Very limited
Classification of space	Strong
Basis of pupil control	Personal with recourse to bureaucratic structures
Discursive relations amongst teachers	Interdependent within a subject department and independent across subject departments

The time-table reflected a mixture of conventional subjects such as English, Afrikaans, Mathematics, General Science, Art/Drama, new subjects or areas of study such as computer literacy and Media and C2005 LAs such as HSS, technology and LO. Table 7.2 shows that six subjects were stand-alone subjects while five were couplets of two distinct subjects such as HSS (History/Geography). These added up to sixteen distinct areas of study, shown in Table 7.4. However, there was no intention that LAs would be taught. Of the sixteen subjects offered, it was planned that the stand-alone subjects - English, Afrikaans/Zulu, Mathematics, Science, Physical Education and Media - would be taught for the whole year and a subject in the five remaining couplets would be taught in each half of the year. This meant that the time allocated to each subject in the couplet must be divided between the two. Two points are noted: firstly, the intention was that subjects be strongly classified and secondly, the time allocation showed great stratification of the subjects into core and peripheral subjects.

Table 7.4 Content Of The Curriculum And Time Allocated

Subjects and LAs	No. of Periods	Time %
English	9	16
Mathematics	8	14.2
Afrikaans or Zulu	7	12.5
Science	6	10.7
HSS (Geography & History)	6	10.7
Home Economics /Life Orientation	5	8.9
Art, Speech & Drama	4	7.1
Business Economics/Accountancy	4	7.1
Computer Lit. /Technology	4	7.1
Physical Education	2	3.6
Media	1	1.8
Total	56	100%

The lower time allocated to HSS (History/Geography), Home Economics/Life Orientation, Art/Speech and Drama, Business Economics/Accountancy and Computer literacy/technology in comparison to English, Mathematics and Science, were to be divided between the subjects. In other words the six periods allocated to HSS (History and Geography) in fact works out to three periods each for History and Geography. The four periods allocated to Home Economics and Life Orientation works out to two periods each. When these couplets are disaggregated as has been done in Table 7.5 such that time allocation per subject for the whole year is reflected for all subjects, a different picture emerges.

Table 7.5 Content Of The Curriculum And Time Allocated Per Subject For The Year, Variance And Mean

Subjects	No. of periods	Time %	Difference from mean	Difference squared
1. English	9	16	9.75	95
2. Mathematics	8	14.2	7.95	63.2
3. Afrikaans or Zulu	7	12.5	6.25	39.0
4. Science	6	10.7	4.45	19.8
5. History	3	5.35	-0.9	0.81
6. Geography	3	5.35	-0.9	0.81
7. Home Economics	3	5.35	-0.9	0.81
8. Life Orientation	2	3.6	-2.65	7
9. Art	2	3.6	-2.65	7
10. Speech & Drama	2	3.6	-2.65	7
11. Business Economics	2	3.6	-2.65	7
12. Accounting	2	3.6	-2.65	7
13. Computer literacy	2	3.6	-2.65	7
14. Technology	2	3.6	-2.65	7
15. Phys. education	2	3.6	-2.65	7
16. Media	1	1.8	-4.45	19.8
Total	56	100%		295.2
Mean		6.25		
Variance				18.45
Standard deviation				4.29

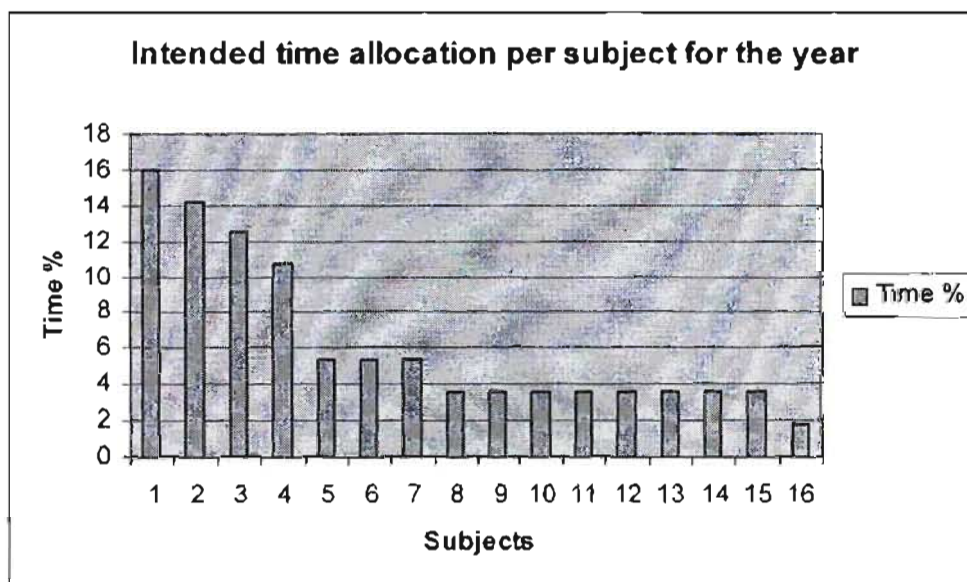


Figure 7.1 Intended Time Allocations Per Subject Per Year

A clear hierarchy of higher and lower status subjects is evident in Figure 7.1. The languages, and mathematics enjoyed the highest status and accounted for 42,7% of instruction time. The core of high status subjects made up of English, Afrikaans or Zulu, Mathematics and Science accounted for 53,4% of instruction time. Over half instruction time was spent teaching and learning these subjects. The remaining 46,6% was allocated to ten diverse subjects – Geography, History, Home Economics, Life Orientation, Art, Business Economics, Accounting, Computer Literacy, Physical Education and Media.

The higher standard deviation of 4.25 and the higher variance of 18.45 indicate greater deviation from the mean and greater variance in time allocation to the subjects. In simpler terms there was a large range between the nine and eight periods allocated to English and Mathematics and the three lessons allocated to History and Geography. The school maintained the traditional stratification of knowledge into higher status core subjects and lower status peripheral subjects. History and Geography were also seen as peripheral subjects.

Student choice was very limited. With the exception of a choice between Afrikaans and Zulu, the remaining fifteen subjects and areas of study were compulsory. Rigid timetabling set out what, with whom and where students learnt. A clear indication of the imposition of power was the strong classification of students of different abilities. Students were finely graded into homogeneous high, middle and low ability groupings and taught separately all the time. Space was also strongly classified with specialist subject rooms allocated for the teaching of specialist subjects.

With reference to the intended curriculum, seventeen different subjects were offered and students were compelled to take sixteen. More than half instruction time was given to the study of four subjects: English, Afrikaans or Zulu, Mathematics and Science. Within this core of high-status subjects, English enjoyed the highest status followed by Mathematics then by Afrikaans or Zulu and lastly Science. The remaining time was allocated to twelve different subjects.

The curriculum structure that was actualised differed from the plan. Where two specialist teachers were allocated to teach their specialist subjects for half the year as in the case of Art/Speech & Drama and to swop with the other teacher for the next half of the year the changeover proved to be difficult and did not transpire and teachers taught his or her specialist subject for the whole year. The thirteen subjects actually taught are shown in Table 7.6 and in Figure 7.2. The class observed did not study Geography, and studied History for the whole year, thus inadvertently escalating its time allocation. The same happened with Art/Speech and Drama. Figure 7.2 shows that more time was used to study History at the expense of Geography; Art at the expense of Speech and Drama; and Computer literacy at the expense of technology. The class observed did not study speech and drama and studied Art for the whole year, thus escalating its time allocation. Similarly technology was not taught and Computer literacy was taught in the time allocated to Technology. Where a specialist teacher in a subject was required to include a LA, like the Home Economics teacher being asked to do Life Orientation also, the teacher alternated systematically between the two. This happened with Business Economics/Accounting as well.

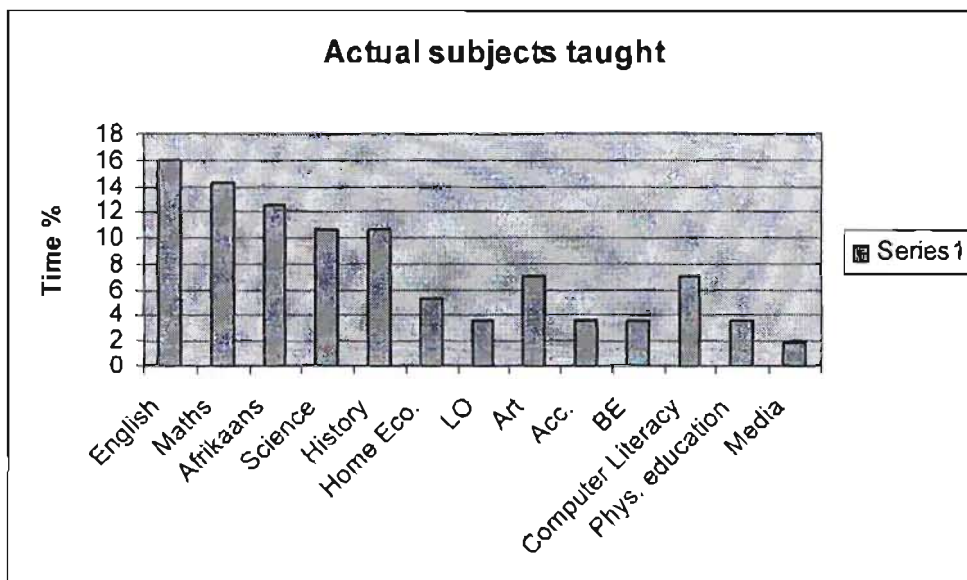


Figure 7.2 Actual Subjects/LAs Taught

Table 7.6 Actual Subjects/LAs Taught

Middle	
Subjects and LAs	Time %
English	16
Afrikaans/Zulu	12.5
Mathematics	14.2
Science	10.7
History	10.7
Home Economics	5.35
Life Orientation	3.6
Art	7.1
Accountancy	3.6
Business Economics	3.6
Computer Literacy	7.1
Physical Education	3.6
Media	1.8
Total	100%

To sum up:

- Sixteen strongly classified subjects were offered.
- With the exception of a choice between Afrikaans and Zulu, students had no options.
- In terms of time allocations a few subjects were given very high status.
- The timetable was rigidly imposed.
- Students perceived as of varying ability were homogeneously grouped into different classes.
- Teachers showed inclinations towards personal forms of control, but felt forced by circumstances to establish positional forms of control.
- Strong insulation of teachers of different subject.
- Strong insulation of subject departments.
- Space was strongly classified and used for specialist purposes.

All the factors point to the traditional collection code being institutionalised. The elaborate bureaucratic structures that were in place to discipline errant students were described in Chapter 6. When the personalised forms of control that teachers were

accustomed to and used by teachers broke down teachers had recourse to and used the disciplinary structures in the school.

7.3 The Regulation Of Knowledge

The regulation of knowledge in the school reflected the collection code. At the top of the hierarchy was the principal who directed power downwards to the two deputy principals. The deputy principal in charge of academic matters headed the school's academic committee that was made up of all Heads of Departments. He was dynamic, well informed, and radical in outlook and an English subject specialist. Knowledge was organised and distributed through well-insulated subject hierarchies made up of subject specialists and Heads of Department and the Deputy Principal. Each head of department managed a number of subject specialist teachers. These structures facilitated the oligarchic control of the school. On most issues, the principal, deputies and heads of departments decided on school policy in closed meetings. During examination time the management staff held meetings for this purpose while the Level 1 teachers did the invigilation of the examination.

The purpose of the Academic Committee was to oversee all academic matters like managing curriculum change. While the curriculum structure was decided on by management, teachers' classroom practices were regarded as their own 'individual business'. The only control over teachers was that to be appointed at the school they had to be graduates in their subjects. All teachers autonomously decided on what and how to teach. Management staff did not supervise teachers' classroom practices and did not appear to know much about classroom practices. This was due to SADTU moratorium on classroom supervision by the department and school staff.

After the launch of C2005 in 1998 the Academic Committee had enthusiastically attempted to implement OBE but had run into serious problems around continuous assessment, the exacerbation of control and discipline problems, the large class sizes and the lack of time for consistent collaboration. Teachers were disillusioned and 'gave up' OBE and reverted to 'chalk and talk'.

The additional fifteen governing body appointed teachers and HODs had not made much impact on the actual number of students per class. The average teacher-pupil ratio was 1:38 with many classes having over 40 students. Students sat right up to the front wall and to the teacher's table. The classes designed for 25 pupils had an appearance of being 'overcrowded'. There was hardly any room to move around and grouped seating arrangements were impossible.

The lack of 'unity in diversity' that characterised the school impacted on the management team's ability to encourage teachers. As one of the two Indian HODs confessed:

My morale is very low - I just come here because of the job because the staff is so diverse it is very difficult to encourage them.

One of the sub-committees of the Academic Committee was the OBE Committee headed by the HOD of the commerce department, a radical SADTU supporter. Besides purchasing a C2005 CD that contained integrated learning programmes for all eight LAs for fourteen thousand rands as well as a variety of learning programmes for teachers, the committee had done little else. The Academic Committee had since resorted to managing the implementation of 'dictated curriculum change' in a perfunctory manner, like, for example, the implementation of the Common Task Assessment (CTA) in the last term. There was no agreed-upon school policy in relation to C2005.

Curriculum integration was not discussed nor attempted, as the comments of the OBE Committee indicate:

P: No, we are not integrating – if we are it is coincidental – we got the HSS guys here – the geography guy is doing geography – the history guy is doing history but they call it HSS – they don't meet themselves to say let's workshop this section – each one is running their own class – that's how the time table is set – so the geography guy may not even go to the history area...

Unlike Rosewood where it was unanimously believed that the disciplines could not be integrated due to incommensurable epistemologies, teachers at this school thought that the disciplines could be integrated, but that it was difficult to implement.

Firstly, practical implementation issues such as timetabling difficulties lack of time to plan collaboratively, ownership of the programme and issues of criteria for assessment were seen to be insurmountable problems. Traditional structures that militated against the change were identified as: the Matric examination that was still subject-centred; the poor conceptual quality of new textbooks; the lack of clear policy guidelines; teacher training that was biased towards disciplinary specialization; and the lack of exemplars of integrated teaching.

Although teachers were favourably disposed towards the idea of curriculum integration most of the teachers taught strongly classified subject knowledge in their classrooms. Teachers expressed concern about the lack of continuity between: firstly, Grade 9, the final year of the senior phase of the GET band and Grades 10, 11 and 12 that was still subject-based. Secondly, the lack of articulation with the knowledge and skills assessed in the high-stakes Matric examination that was subject-based; and thirdly, the lack of continuity with tertiary education at university that still used points allocated to subjects to determine access to university.

Other factors related to the poor departmental support in the form of training teachers adequately to implement the new curriculum, the ineffectiveness of the training done and the lack of LSM s and learning programmes. The crash courses and workshops were inadequate and in the absence of clear guidance teachers taught what they knew well, their subjects.

All teachers felt that they did not know enough about other subjects to be able to implement integration of subject knowledge, as one of the teachers explained:

I think that in a high school environment the whole idea becomes difficult because teachers do not have enough knowledge about each others' disciplines - we would have to spend a hell of a lot more time studying to be teachers than we do to reasonably integrate other subjects into our subjects.

Integration was viewed as suitable for primary school and for Grade 8, but problematic in the higher grades in high school. Teachers questioned: 'Why should someone who loves History and has a passion for it also have to teach Geography?'

Diverse attitudes towards subject content and skills existed. The majority thought that skills were specific to subject content and were learned within the context of a subject. Others thought that skills could be learned via any content.

7.4 Social Organisation Of Teachers

There was strong insulation firstly, between teachers of different subjects and secondly, between different subject departments. Generally teachers of different subjects worked independently of each other. The six English teachers were 'led' by the Grade 9 A teacher who chose the poems, comprehension exercises and topics to be taught, and the resource materials to be used. The novel that the classes studied differed and depended on what texts the school had in stock. The five mathematics teachers worked independently. Subject department meetings were held regularly.

African teachers were strongly insulated from the rest of the staff. Although the school had gone some way into racially desegregating the level one staff, the chasm between African and White teachers was manifested physically and ideologically. African teachers occupied the front corner of the staff-room. The residues of apartheid were reflected in the power relations that prevailed between White and African teachers concerning curricular matters. As the commerce HOD commented 'African teachers are just sucked in – they are very obedient, let's put it that way'. African teachers felt insecure with reference to their continued employment at the school. Most of the Indian teachers participated actively and were more socially integrated than African teachers generally. Social integration was achieved by mostly accepting the 'way things were done at the school'. Whatever tension existed between Indian and White staff was latent. The three science teachers tried to collaborate but serious tension between the two White teachers and the Indian teacher was noted. The Indian teacher was marginalized to a large extent. The other two teachers frequently complained about her 'inefficiency' and 'not doing her work'.

Racial differences in who taught the subjects were noted: only White teachers taught Mathematics; English was taught by White and Indian teachers; and Science was taught by two White and an Indian teacher.

In summary, in addition to the insulation of subject teachers and subject departments the insulation of African teachers was noted.

7.5 Curriculum Practices

Before classroom practices are described, the one overwhelming concern of the management and staff, the control difficulties that preoccupied teachers is discussed.

7.5.1 Discipline And Control Difficulties

Bernstein (1996) argues that the regulative discourse that refers to the 'forms that hierarchical relations take in the pedagogic relation and to expectations about conduct, character and manner' (*idem*:27) is a prerequisite for the instructional discourse. The lack of accepted norms and routines in relation to conduct, character and manner resulted in many teachers individually and repeatedly trying to establish an acceptable teaching and learning environment in the classroom. Teachers used much of the lesson time to get the students in the right frame of mind to get on with teaching their subjects. In many cases the instructional discourse, the teaching of subject or specialised LA knowledge and skills, was suspended in the attempt to secure the regulative. In extreme cases teachers lost control completely. This point is substantiated by observations of classroom interactions, teachers' own views, and the deputy principal's views.

Teachers went to class prepared to do 'battle' and even fearing 'unruly chaos' from the notorious classes. It was not exceptional for very qualified and committed teachers to walk out of classes and literally go crying to the deputy principal's office. The classroom was often a site of passive and active aggression towards teachers. The majority of teachers were alienated and relegated to the margins and were reduced to desperately trying to gain control of students. Classroom interaction was characterised

by contestation over interpersonal social relations amongst students and between teacher and students. Students appeared to believe that it was within their rights to decide whether to listen to or not to listen to the teacher.

Students chatted casually all the time and listened to the teacher secondarily. Others spoke loudly, some screamed across the class, walked around freely, engaged in fistcuffs, read the newspaper, did homework and made strange sounds. Students had no qualms of openly defying teachers, taking over the classroom to quarrel with other students and to act in very individualistic ways. Students in groups and pairs took turns to divert teacher and class attention to their personal grievances over trivial incidents like being insulted by another student, getting back their pen or other belongings, getting up and walking to another student, shouting across the class, and getting even with other students. As one teacher explained:

...if somebody (a student) says something and you really disagree with them it is perfectly normal for the average Fernhillandrian to stand up and thump him – it really is – or kick him under the table or steal his book and chuck it out the window.

This kind of active aggression directed at other students was often directed towards teachers. Some pupils stood up and verbally challenged teachers aggressively in full view of other students. Teachers were often drawn into these incidents and were engaged further in their resolution. As one of the teachers explained:

I know I speak to some members on the staff and they are unhappy – they tend to get into verbal battles with certain kids ... and what happens to them? They become upset – I am quite sure it affects their social...their domestic life...

Students were often sent out of the classroom or given ‘detentions’. Many teachers explained the effectiveness of ‘setting the tone’ at the beginning of a lesson by ‘making an example’ of being ‘firm and hard’. Often, this did not prevent other students from engaging in disruptive ways throughout the lesson.

In the case of many teachers much teacher talk remained largely restricted to control aspects and the instructional discourse was relegated to secondary focus, as one of the teachers explained:

The problem is because the classes are so rowdy and uncooperative you miss the ones that actually do their work, you never get time to pay any attention to them because you spend half the period telling every one else to keep quiet and pay attention, bring your book, why didn't you do your homework, stop walking around, stop chewing gum ...

Some teachers (Mathematics, Accounting and Computer Literacy) in response established very authoritarian, distant, aloof, undemocratic, and impersonal regimes in their classes. Students were submissive and apathetic and the classroom atmosphere was very tense and oppressive. The teacher indicated that she was 'a dictator and learners do what I say'.

Other teachers made themselves personally accessible to learners and this was socially and personally empowering to learners. For other teachers the focus changed from mediating knowledge to surviving the lesson – teachers were pressurised by students on the one side and the panoptic views of management and other teachers who blamed them for lack of control. Teachers who had control difficulties over and above the general acceptable level were well known in the school. These teachers feared that they might lose their jobs if they could not control their students, as was explained by the African history teacher:

These kids are different to the kids of different years – these kids can be loud, they can be very talkative – when we try to implement it (C2005) it gets out of hand - and the principal will be here to check what the noise is all about - and then what do you do - you switch back to the old system – yes that's it - we don't want to lose our job – because it appears that you are not doing your job, there is always noise from that class so that teacher is not doing well or she cannot manage the class – there is a problem with discipline – we don't need such teachers in this school and they will be replaced –

The Indian science teacher who could not gain control of her class was declared 'redundant' at the end of the year and redeployed at another school.

The deputy principal, who oversaw academic matters in the school, used much war imagery to describe the relations between students and teachers such as 'besieged', 'embattled', 'day-to-day battle' and 'mass warfare'. He also sensed teachers to be 'in despair' and 'going through the motions with a sense of futility'. Teachers themselves

felt ‘trampled on’; ‘exhausted’; ‘ineffective’; ‘overwhelmed’; ‘sapped of energy’; and as if they were ‘beating one’s head against a brick wall’. Teachers described many of their lessons as ‘absolute chaos’; ‘stalemate’; ‘wrecked’; and ‘mass warfare’. An older teacher spoke about her ‘loss of faith in human nature’.

The deputy principal’s comments: ‘I see many embattled teachers trying desperately to maintain a culture of learning and teaching at our school’ aptly described the ethos of the classroom. He summed up the control difficulties in the school:

One of the things we are not acknowledging is that learners are becoming, for a variety of reasons, more difficult to teach – classroom management is more challenging these days than it was in the past – for various reasons not many people are acknowledging that OBE and all its requirements – things like CA presume certain climates in classrooms – presume certain types of learners – whereas I see many embattled teachers trying desperately to maintain a culture of learning and teaching at our school – and I talk to other teachers in other schools and it does not sound unique to our school – I think things like doing away with corporal punishment, we agree that corporal punishment was wrong, but subsequently discipline has become more ropey – discipline has become more challenging and more time consuming and more time is spent with learners who are challenging the system – one role, one part of an educator’s day-to-day battle is with disciplining learners – now that’s a very negative part of the job – demanding negative energy – draining one and at the same time you are meant to be doing something very positive and constructive and demanding a lot of time and creative energy like CA now, the two almost work against each other ...

He also commented on the ‘frustration amongst teachers and the sense of futility and the sense of despair from a lot of educators who were trying and not going anywhere’.

Teachers furnished different reasons for the control difficulties described. All teachers thought that the very large class sizes were the root cause of the problem. Some teachers thought that the ‘OBE system’ that the students were schooled in was the problem.

The African teacher disclosed that when he first started he was not respected by the children, the majority of whom were African themselves:

They (parents) send them to the so-called White schools where there are White teachers – what does that tell me? They look down upon themselves. They

can't teach their own kids so kids will come here with the attitude that it is only the White person who can give me something valuable – not a African person – it takes some time for the kids to respect you when you are African.

The elaborate structures that were set in place to deal with errant students have been described in section A of this chapter. It was generally accepted that maintaining control and discipline in the classroom was each individual teacher's responsibility. The tribunal that was set up was used in exceptional cases.

I now proceed to a conceptual analysis of the curriculum practices of the teachers. Table 7.7 that follows presents a tabular summary of the practices. Table 7.8 presents a summary of the curriculum practices of the Grade 9 teachers that fall into five clusters.

Table 7.7 Conceptual Analyses Of Curriculum Practices

Criteria		English	Mathematics	Science	History	Home Eco.	LO	Art	Acc.	CL
1. What knowledge was taught?		Specialised and popular knowledge	Specialised for high 'ability' only and utilitarian for low ability	Simple utilitarian Knowledge for all classes	Specialised	Utilitarian	Utilitarian personal. Desirable moral and practical judgements	Specialised	Specialised	Utilitarian
2. Classification	Power	C-	C+	C-	C-	C-	C-	C-	C+	C+
	Intellectual	C+ to C-	C+ +	C-	C + +	C +	C+	C+	C+	C+
	Inter-discursive	C+ +	C+ +	C+ +	C+ +	C+ +	C+ +	C+ +	C+ +	C+ +
	Intra-discursive	C+ +	C+ +	C -	C+ +	C -	C -	C+ +	C+ +	C+ +
3. Framing of ID What knowledge was framed	Who controls?	F+ to F-	F+	F+	F+	F+ to F-	F+	F+	F+	F+
	Selection	F+ to F-	F+	F-	F+	F+	F-	F+	F+	F+
	Sequencing	F+ to F-	F+	F-	F+	F+	F-	F+	F+	F+
	Pacing	F+	F+	F-	F+	F+	F-	F+	F+	F+
	Evaluation	F+	F+	F-	F+	F+	F+	F+	F+	F+
4. Framing between specialist and everyday		F+ to F-	F+	F-	F+	F+	F-	F+	F+	F+
5. Framing of RD		F- and democratic	F + and authoritarian	F-- and loss of control	F-- and loss of control	F-- and loss of control	F-	F-- and loss of control	F+ and authoritarian	F+ and authoritarian
6. Pedagogy	Visibility	Visible	Visible	Visible	Visible	Visible	Visible	Visible	Visible	Visible
	Epistemic operations	Ranged from explicit to implicit	Explicit to very watered down	Obscured	Explicit	Explicit	Explicit	Explicit	Explicit	Explicit
	Recognition rule	Explicit	Explicit	Explicit	Explicit	Explicit	Explicit	Explicit	Explicit	Explicit
	Instruction	Whole class	Whole class	Whole class	Whole class	Small group	Whole class	Whole class	Whole class	Whole class
Assessment	C/SA	C and SA	C	C and SA	C and SA	C and SA	C and SA	C	C	C
	S/MM	MM	S	S	S	MM	MM	MM	S	S
	I/Grp	I & G	I	I	I	I & G	I & G	I	I	I

*C/SA – Cognitive/socio-affective *S/MM – Single or multiple mode *I/Grp. – individual/group

Table 7.8: Curriculum Practices Grade 9A only

Criteria	Cluster 1 Mathematics, Acc, C/L	Cluster 2 Science	Cluster 3 English	Cluster 4 Art, History	Cluster 5 Home Economics, LO
Valid knowledge	Specialised knowledge and skills for 21.4% of instructional time	Utilitarian knowledge and skills for 10,7% of instructional time	Mixture of specialised subject, popular and utilitarian knowledge for 16 % of instructional time	Specialised subject knowledge and skills with attempts to contextualise in own experience	Utilitarian knowledge and skills
Classification Inter-discursive	Very strong	Weak strong	Very strong	Very strong	Very strong
Classification Intra-discursive	Very strong	Very weak	Very strong	Very strong	Very weak
Classification power relations	Authoritarian, positional	Personal	Personal	Personal	Personal
Classification intellectual boundaries	Strong classification of specialised knowledge	Weaker classification of specialised science knowledge	Mixture of strong and weak classification across lessons	Strong classification of subject knowledge	Strong classification of specialised knowledge
Framing of ID (who framed?)	Teacher	Teacher	Teachers and students	Teacher and students	Teacher
Framing of specialised subject discourses	Strong framing of specialised subject knowledge	Weak framing of specialised science knowledge	Mixture of strong and weak framing across lessons	Strong framing of specialised subject knowledge	Strong framing of specialised subject knowledge
Framing of regulative discourse	Very strong	Very weak and loss of control	Very weak	Very weak and loss of control	Very weak and loss of control
Framing between educational and everyday knowledge	Very strong	Very strong	Mixture of strong to weak	Very Strong	Very strong
Pedagogy	Visible, deliberate exposition and explanation to facilitate	Visible but obstructed by student conduct	Mixed - visible deliberate exposition and invisible	Mixed – visible with deliberate exposition and	Visible but obstructed by student conduct

	cognitive construction of knowledge		based on individual subjectivity	explanation and invisible based on individual subjectivity	
Epistemic operations	Explicit	Obscured	Mixed – both traditional epistemic operations and affirmation of individual constructions of knowledge	Explicit	Explicit
Epistemology	Traditional subject knowledge and procedures	Useful science knowledge	Mixture of traditional and popular knowledge	Application of traditional subject knowledge and procedures	Traditional Anglo-centric knowledge and values
Recognition rules	Explicit	Explicit	Explicit and subjective	Explicit	Explicit
Cognitive demand	Complex	Simple	Mixture of complex and simple	Complex	Simple
Assessment criteria and mode	Explicit cognitive competences, individual and formal	Cognitive, individual, formal	Mixed – cognitive/ social, individual/ group, formal and informal	Cognitive, individual, formal	Mixed Cognitive/ socio-affective, formal, individual and group
Control	Positional	Personal and loss of control	Personal	Personal and loss of control	Personal and loss of control
Identity	Retrospective Subject-centred, purist ideology, old humanist social group	Retrospective, Subject-centred but obstructed by ideology of fixed innate 'ability', old humanist social group	Prospective, balance tradition with popular knowledge, social change ideology	Prospective Subject-centred application to own context, Post-modern	Retrospective Subject-centred, old humanist ideology

7.5.2 What Knowledge Was Taught?

I was allocated to research Grade 9A that was reputed to be the ‘bright’ class with highly motivated students. After a week of observations of classroom practices of Grade 9A many of the teachers (probably out of frustration at having an observer in their class) thought that I should also observe the other five Grade 9s that were graded according to ability. The ‘lower ability’ classes were notorious for their lack of interest. I thus ended up observing classes across the ‘ability’ spectrum. The practices of teachers varied across teachers and across the six classes of Grade 9 students.

In each section an analysis, firstly of the curriculum practices of the Grade 9A teachers as a unit is done, and secondly, an analysis of curriculum practices across the ‘ability’ spectrum is included briefly. In most subjects the structure of knowledge, pedagogy and assessment varied in the six classrooms. Generally the highest ability class 9A was taught strongly classified specialised subject knowledge and skills. In the lowest ability class classification was weaker.

Two overarching factors conditioned what knowledge was taught – firstly, it was generally agreed that the school did not prioritise high academic standards. The English HOD who played a key role in deciding on directions for the school mentioned that ‘Fernhill does not pitch for a high standard of academic work’. Teachers spoke about developing students’ social skills in tackling conflict situations, and teaching basic utilitarian skills.

Secondly, the perceived ‘ability’ of students from high ability to the ‘low ability’ and ‘incapable’ further conditioned what knowledge was taught. The highest ability group 9A was taught different knowledge and assessed differently. The second rule was broken when it came to science where all six classes were taught the same weakly classified, utilitarian science knowledge.

Grade 9A students were being inducted into a variety of forms of knowledge: specialised discourses; into application of specialised discourses to their own experiences; into popular knowledge in some subjects; into utilitarian discourses; integrated knowledge and into 'socially desirable' moral and practical outcomes. These are described in the next section.

7.5.2.1. Specialised Strongly Classified Subject Knowledge And Skills

The 9A class, the highest 'ability' class, was taught pure disciplinary-based subject knowledge. The Accounting teacher taught the cash purchases and receipts journal to students. The computer teacher taught students the various functions and specialised vocabulary associated with the computer. Some English lessons were devoted to the study of English as a discipline, for example in a poetry lesson rhyme, alliteration, metaphor and simile were taught, and in a grammar lesson the use of the apostrophe was taught. These students were taught formal mathematics such as algebra, geometry and measurement. In the lessons observed, the topic was solving of simple equations and equations with brackets. The epistemic operations of the subject were explicit. Students were observed to be acquiring the recognition and realization rule. In the lowest ability Grade 9 'J' mathematics was very weakly classified.

For example:

- More definitions were being drilled, for example, 'an equation is a sentence in mathematics that uses an equal sign'.
- There was a concern about correct spelling, students were asked to memorise the spelling of terms such as acute, obtuse, integer.
- Much time was spent copying diagrams on parallel lines in their books.
- Much time spent on writing notes for example 70 degrees – acute, 270 degrees reflex, $\frac{1}{4}$ of a revolution is 90 degrees.
- There was a concern with pronunciation; for example, students were made to pronounce integers many times.

- Much simpler less challenging examples were being done, for example, $17 - 10$ divided by 2 =?
- Simple statistical techniques to handle data were taught such as working out mean, median and mode using 7 single digit numbers.
- More terms were being focused on such bar graph, column graph, broken-line graph, distribution table, tally chart, and frequency.

The epistemic operations of the subject were obscured as more linguistic competences were being taught.

7.5.2.2 Application Of Specialised Subject Knowledge And Skills

Specialist knowledge and skills were taught in Art and students were expected to apply it to make sense of their unique contexts. Subjective knowledge based on students' own experiences were affirmed. However, the teacher indicated her concern about the number of sketches of 'shebeens' and HIV/AIDS that she had been getting. The History teacher taught European history and made connections with the situation in Zimbabwe and South Africa.

7.5.2.3 Both Specialised And Popular Knowledge And Skills

The 9A teacher had struck a balance between formal English knowledge and skills popular knowledge and students' interests. The poem 'Crack' related to 'heart matters' that students identified with easily. In addition to teaching formal aspects of English such as vocabulary, appreciation of plays, novels and poems, parts of speech, the teacher allowed students during their oral assessments to present to the class their favourite music and super stars, sporting personalities, movie stars and similar popular topics. Students debated the use of listening to music that was vulgar and repulsive to some and fine with others. There were many instances of relating the meaning of the poems and novels to topics such as 'relationships' that were of immediate interest to teenagers.

7.5.2.4 Integrated And Utilitarian Knowledge And Skills

The science that was taught was integrated and utilitarian. The weak classification of science knowledge and skills was due to four reasons. Firstly, sections that were traditionally taught as physical geography like planets in astronomical geography, rocks in geomorphology and atmosphere in climatology were being taught as NS. Secondly, the three science teachers taught science knowledge that was immediately useful. Activities set out in the LSM that required experiments to be done such as Activity 1 below were left out:

Activity 1: Connect a short, thick copper wire between A and B. Switch on for a short time and observe what changes take place:

Now answer these questions:

- a) How does the brightness of the bulb change when AB is connected?
- b) How does the temperature of the connecting wires change?
- c) Where was the short circuit?
- d) What would have happened if you had left the switch on (with AB connected) for a long time?

Activity 2: Use a fuse

Set up this circuit which is almost the same as the circuit in the last activity:

- a. Switch on and observe the brightness of the bulb.
- b. Connect a short, thick copper wire between A and B (this is the short circuit), switch on and observe what happens to the bulb and the fuse wire.
- c. Now answer these questions:
 - What happens to the brightness of the bulb when you switch on with the short circuit in place?
 - What happens to the fuse wire when you switch on with the short circuit in place?
 - What should you do before replacing the fuse wire?

- What would happen if the fuse wire were so thick and strong that it did not change during a short circuit?
- Why is it important to use a fuse wire that melts easily?

Thirdly, the activities involving comprehension of newspaper reports of accidents arising from electrical faults such as Activity 3 were done:

Read this report from the Ntisiki Tribune:

Factory burns down

Garment World, the large clothing factory was destroyed by fire on Tuesday night. Fortunately, the caretaker woke up in time to escape and no other people were in the building at the time. The factory had just finished an order for 10 000 dresses for the new season. All stock, machinery and dress material went up in smoke.

The immediate effect of the fire is that 400 workers are now out of work for at least a season. The cause of the fire is thought to be an electrical fault.

Rodents caused the short circuit. Detectives investigated the burnt-out building. Some of the burnt electric cables showed signs of tooth marks. In the basement were remains of a large number of rats. On this evidence the police were able to report that it was likely that the fire was caused by a short circuit.

Four questions were set on it were:

1. In groups discuss the causes of the fire.
2. Do you think the police are correct in saying the fire was caused by a short circuit?
3. What role do you think rats played in causing the fire? Explain your reasoning.
4. How could this fire have been prevented?

Fourthly, many pages of factual data on energy options such as facts about solar power, wind-generated electricity, coal burning power stations, nuclear power stations and facts about hydroelectric power stations were given, for example:

Facts about nuclear power stations:

- The fuel, uranium, is mined in South Africa.
- The fuel has to be processed in France.
- There is no air pollution unless the reactor leaks accidentally.
- The solid waste produced is dangerously radioactive.
- A nuclear power station needs to be replaced after about 30 years.

The activity the learners were set:

- a. Read and discuss the information supplied and add your own information.
- b. Classify the items into lists of advantages and disadvantages.
- c. Discuss the possibility of a compromise in which you could, as a group, recommend the use of this type of electricity generation even though there are disadvantages.
- d. Write down your group's decision on whether or not you could recommend this source as a practical, clean, economical energy source for South Africa, giving reasons for your decision.

The epistemic operations of science were obscured. Students were acquiring the recognition and realisation rule in terms of directly useful simple science. They were able without effort to recognize the knowledge being presented to them and were able to realize the expected legitimate text. For example, in exercises such as the one below, learners were expected to fill in the blanks by reading and comprehending notes given to them.

When the _____ wire touches the _____ wire it is called a short circuit.

Most of the learners were able to supply the answer 'live' and 'neutral' without much thought. Unlike the situation in mathematics where 9A was taught formal mathematics, all grades including 9A were taught very weakly classified science.

7.5.2.5 Integrated Knowledge And Skills

In HSS the 9A teacher taught just History and contextualised it within SA history. He ignored the Geography sections. The HSS teacher of 9B taught integrated History and geographical knowledge on the topic WW1. Of the nineteen-page resource pack given to students three pages were allocated to geography. Amidst historical sections such as Hitler's road to war, the League of Nations, the Treaty of Versailles, The rise of Fascism, the popularity of Fascism in Europe, and Hitler's foreign policy, geographical sections were introduced entitled 'Beneath the ground' in which different types of rocks, mineral resources and mining were explained. It was clearly a case of Geography becoming the handmaiden of History.

7.5.2.6 Moral And Practical Judgments

The LO lessons were based on moral and practical judgments based on integrated knowledge. The topics taught were 'Youth and Premarital Sex – the reasons'. A representative from the 'Pregnancy Crisis Centre' addressed and showed students a video and reviewed the video around the questions: 'reasons for abstinence as the best and healthiest choice for teens' and 'is abstinence realistic for teenagers today?' The second lesson revolved around three components of good character: moral knowing, moral feeling and moral action.

In contrast to the elite school in the study where specialist knowledge and skills were consistently taught across subjects, a whole variety of knowledge discourses were being taught at Fernhill. The three subjects not taught at all to Grade 9A were Geography, Speech and Drama and Technology. With regard to the subjects that were taught, two issues that are raised with regard to the implementation of curriculum integration in Science and HSS are: key science specific skills such as observation, experimentation, and data collection were not being taught to students. Similarly, skills specific to geography such as map skills and spatial location were not being taught to students.

Grade 9 A students were being denied epistemological access to four specialised discourses – Geography, Speech & Drama, Technology and Science.

7.5.3 Discursive Relations

Generally, very strong intellectual boundaries were maintained. Firstly, in terms of inter-discursive classification most teachers strongly insulated their subject from other subjects, therefore coded as C+ + in Table 7.7. The theme or programme organiser ‘personal growth and development’ served no purpose. Teachers commented that only the ‘very bright’ students would have been able to make the connections on their own.

Secondly, intra-discursive boundaries were also strongly maintained in most subjects as teachers taught their subjects in insulated and separate sections. In English, mathematics, History, Art and Accounting intra-discursive classification was strong and therefore coded C+ + in Table 7.7. Different sections of the subjects were strongly separated, for example, in English, poetry, grammar and comprehension, novel and orals were kept separate and were on completely unrelated content.

Intra-discursive classification was weaker in NS, HE and LO, therefore coded C- in Table 7.7. These teachers were teaching topics that required the integration of knowledge. The section on electricity was being taught under the topic ‘Shocking News’. In HE the topic was making and presenting a meal ‘Kebabs, Beefy Rice and Salad’ while in LO the topic was ‘Youth and Pre-marital Sex’. Subject knowledge was not easily discernible in these topics.

Thirdly, with reference to pedagogic relations, strong social boundaries were maintained by the Mathematics, Accounting and Computer Literacy teacher. Authoritarian and positional power relations kept students in their place. These teachers ‘took no nonsense’ and did not give students a chance to ‘get started’ with disruptive ‘behaviour’.

Weaker social boundaries were maintained by the English, Science, History, Art, Home Economics and LO teacher. More democratic and personal social relations were observed. These teachers were more approachable by students and, with the exception of the English teacher who was able to strengthen and weaken power relations and not lose control altogether, often lost control of students.

Fourthly, the strongly classified social boundaries served the purpose of inducting students into 'given' specialised mathematics, accounting and computer discourses. The weaker social boundaries maintained by the teachers in science, HE, and LO, did not facilitate the crossing of intellectual boundaries therefore coded as C- in Table 7.7. Students interpreted the weaker social boundaries as opportunities for personal and individualistic priorities.

7.5.4. Pedagogy

7.5.4.1 How Knowledge Was Taught?

The control difficulties, described earlier, resulted in teachers adapting their pedagogic strategies. The pedagogic strategy, seating arrangements and shifts from one to another activity in the classroom was decided on the basis of the fear of losing control of students. The pedagogy ranged from deliberate exposition and explanation to transmission of knowledge to mixed pedagogic practices to suspension of pedagogy for keeping control.

All teachers felt that they could not use progressive pedagogic strategies, such as learner-centred social construction of knowledge, due to control difficulties that arose. Teachers spoke about being forced to 'be on guard' all the time. All teachers made use of a visible teacher-centred pedagogy for the purpose of maintaining control with varying effects for various reasons. Generally students were seated in rows and columns to facilitate control. Teachers attempted to facilitate the individual cognitive construction of knowledge. Teachers commented on the need to keep a brisk pace by 'not pausing too long between

sections' or activities for fear of losing control. The common pedagogic strategy of direct whole class instruction used by the teachers appeared to be a response to how effective the teacher was in controlling the students conduct. The majority of teachers who could not get students attention after setting activities that students undertook in groups or pairs and who had experience of 'students bringing the roof down' or 'degenerating into unruly chaos' dared not use such techniques again. All teachers indicated the chaos that ensued when they tried to do group based construction of knowledge.

As the African History teacher explained with reference to small group work:

Teacher 1: ...classes are very noisy and it does not work – you give them work – instead of being on task they just do their own things so they talk about their own stories and so on - so in that way it does not work well - so you have to intervene and do work with them and keep them busy individually, rather than in a group.

Another teacher related her experience with group-work:

Teacher 2: ...we did bits of group-work in the first term and they nearly broke the class down and I have decided never again...

The challenges of group work in a class of 40 students and the attendant control problems that arise were very astutely described by one of the teachers:

I tend to favour a fair amount of control initially – I find that the kids don't work well in situations where you set them a task even if you stagger it, even if you say look your big picture is to produce a teach-back to the class on this particular topic – okay that's your big task – first of all you need to do this, then you need to do that, then you need to do that, then you need to do that - even if you break it down for them and give them mini tasks, even if you go through the whole route of setting up – even if you go through the process of saying this is the person who monitors the time – this is the person who monitors whether the people talk or not – in a class of 40 children – in a classroom like this – within five minutes you have absolute chaos – its not possible – because kids cannot work in groups of more than 5 to 6, when you have just 4 kids it's a battle, so I try to get them to work in groups of 5 or 4 which means that I have 8 children talking – eight children talking at once in the class at Fernhill translates into mass warfare almost – because our children are not are not quiet listeners so if you got one kid in the

group talking you will have the others oohing, uming and aahing and responding, saying good, excellent, and so on – all very loud – very enthusiastically, which is fine, but it does make control issues difficult.

In the majority of cases the classroom ethos was characterised intermittently by teachers teaching when students were not listening, insulting students who were disruptive, making repeated requests for attention, screaming at students, engaging in verbal ‘battle’, refusing to teach, and so on. Many of the teachers did not teach with a sense of plausibility. Many resorted to just passing on information in the form of photocopied notes or writing answers on the board to activities in the material.

These disruptions slowed down the pacing of knowledge in NS, Art, History, LO and HE. With the exception of the History teacher who was an African male, all other teachers were females. Two of NS teachers were White and one was Indian.

Five of the six mathematics teachers taught mathematics in the ‘old-fashioned way’ that according to them was the ‘best way’. Other teachers deliberately decreased opportunities for students to actively participate in their lessons. A common view amongst all the teachers was that students did not want to ‘discover things’ and that ‘they want to be told’ what they should study for examination purposes:

N: No I don’t think so – they don’t learn anything – kids their age don’t want to discover things – they want to be told, this is what you have to learn – go study it – this is your test – now just before the exams the only thing they are interested in is which stories to study, which poems do we have to study what’s going to be in the language paper – they don’t care about discovering things and finding out for themselves – how it relates to their daily lives – that’s not important to them – they simply want to know what physical bits and pieces they have to learn – so they basically want to know what’s for marks.

7.5.4.2 Framing Of Knowledge

The framing of knowledge was strongly controlled by teachers in terms of traditional subject knowledge, in seven of the nine subjects, therefore coded F+ for who controls in Table 7.7. Generally students were not given much choice in what they studied. It was

only in English and Art that students were given some choice therefore coded as F- in Table 7.7. The English teacher created spaces for students own interests to be shared on a daily basis. The Art teacher expected students to apply specialised subject knowledge to their own individual experiences.

Seven of the nine teachers selected knowledge on the basis of the traditional disciplines, thus coded F+ in Table 7.7. In mathematics the knowledge selected to be taught differed across the ability groupings. In terms of selection of knowledge to be taught teachers followed the traditional syllabus. The progression and sequencing of subject topics and concepts were drawn from the structure of the discipline.

In Grade 9A the Mathematics and Accounting teachers systematically and deliberately introduced and predicated subject specific procedures and concepts. Selection, sequencing, pacing and evaluative judgment were done on the basis of traditional subject knowledge. The strong framing made the epistemic operations of each subject explicit. Students appeared to have acquired the recognition rule.

In the middle stream, mixed ability class the discourse was strongly classified but the pedagogy changed to include group application of taught skills. As in the high ability classes, the teacher also attended to queries from learners individually.

In all classes the evaluation criteria was strongly framed. From the start each teacher instructed learners about specific mathematics skills and concepts and how to get the right answer. The highly specified context enabled learners to recognize the legitimate discourse but the majority were unable to realize it.

In the lower ability mathematics classes the strong framing of control relations were aimed at teaching simple and utilitarian knowledge. A common pedagogy across classes was observed. Teachers would explain how to do a skill to the class, learners are then asked to apply the skill, the teacher reviews the example on the board, more examples are set and applied and reviewed and each lesson concludes with more examples being set for

homework. In four out of the five classes learners worked individually and were seated in single rows and columns. In the better classes examples set for homework are reviewed first. In the other classes teachers did not set homework because the learners did not do their homework.

Thus the lower ability groups were taught very weakly framed mathematical knowledge and skills. The stratification of students and mathematical knowledge meant that the majority of students did not get to do 'real' mathematics and write the 'real' mathematics paper. Despite this strategy, the majority were unable to realize the discourse and this would play out high failure rates. It was considered 'normal' in mathematics that a few students passed. In one of the lower ability classes the average mark was 24% and only 3 passed in the standardized mathematics test although it assessed what teachers considered being 'diluted' and 'non-academic'.

In English students interests were considered by the teacher in his selection of knowledge in some lessons, therefore coded F- while in other lessons the discipline itself influenced the choice of sections to be taught, such as the use of the apostrophe, therefore coded as F+. The Art teacher after trying the OBE version of Art as recontextualised in the LSMs rejected it and chose to teach the traditional formal aspects of Art. She expected students to apply the specialised skills to their drawings of their unique experiences. In NS teachers suspended their own preferences and followed the LSM that weakly recontextualised specialised science knowledge and skills. And this resulted in the epistemic operations being implicit. Students were learning the recognition rule of utilitarian science knowledge.

In the lessons observed there was a very real world focus and on knowledge that can be used in daily life. For example, one of the lessons observed was designed around the skill of how to wire a plug correctly. The teacher begins by explaining to the class the three wires which are colour coded within the thick electrical cord – earth is green and yellow, live is brown and neutral is blue and that brown is joined to the right and the blue is joined to the left. She then tells them how to cut and expose the copper wire, "use a

sharp knife to cut through the outside insulation, be very careful not to damage the brown, blue and yellow/green insulation, make sure the connections are correct and do not stretch the wires when connecting”.

The English teacher, an Indian male maintained strong control all the time, even during oral presentations by students. The ‘chatting’ that students engaged in was decreased. Lessons were interactive and students participated actively. In these lessons as well, group work was not set. The selection of knowledge was done on the basis of students interests: thus the poem ‘crack’ under the theme ‘heart matters’ was analysed, the novel *The Eye of the Tiger* by Wilbur Smith was being read and discussed. All aspects were related to students’ own lives.

The teacher determined sequencing with basic skills taught first and progressively more complex skills introduced thereafter. The vertical integration of meaning was aimed at. Pacing differed across the six classes with a rapid pace in 9A and much slower pace in 9J or 9M.

7.5.4.3 Framing Of Academic From Everyday And Community Knowledge

The strength of framing of academic from everyday and community knowledge differed. Strong boundaries were maintained between academic knowledge and the everyday and community knowledge of students. The message that was loud and clear was for students to keep their own realities outside the school and classroom. Students’ everyday and community knowledge was hardly ever referred to for eight of the nine cases. The framing of specialised subject knowledge was very strong. It was only in English that students were allowed to discuss their own musical interests like Kwaito, rap, R & B and so on, during their oral presentations at the beginning of each lesson for five minutes per speaker. In Mathematics, Acc, and CL, everyday and community knowledge was not referred to at all. Although very utilitarian knowledge was taught in science, teachers did not talk about students’ own experiences. Similarly in HE very Anglo-centric meals were chosen to be prepared. The moral lessons transmitted in LO were done so

unproblematically and without reference to cultural meanings attached to them. In Art specialised subject knowledge was used to make sense of the everyday. Personal expressions untempered by specialised art were discouraged.

7.5.5 Assessment

Generally teachers assessed specialised cognitive competences formally in examinations and tests. Teachers were also experimenting with informal assessments of cognitive competences. Not all teachers assess all socio-affective competences. Teachers made it clear that they felt very uncomfortable in assessing values. Most teachers preferred to assess students individually and it was only in HE that group assessment was done. All teachers spoke about how unmanageable CA was with the large class sizes in the school. What knowledge was being assessed differed across the 'ability' spectrum. One of the mathematics teachers explained that it was only 9A that wrote the 'really proper mathematics paper':

V: ...in Grade 9 they have been able to select the top academic people – they can do what's required in the mathematics syllabus the others you know we just had to select what they can cope with.

D: But do they all write the one paper?

V: They write two different papers. .

D: Is it?

V: Because if you have 6 classes in Grade 9, the 9As will write the really proper mathematics paper - the other 5 won't understand it - they won't know where to start so they get the filtered down paper with some Grade 8 examples.

D: What is taught in the remaining classes?

V: Yes, mathematical literacy because that means something to them and often unfortunately you have to do it in the school – you have to adjust the level of knowledge to what they can handle –

The science teachers assessed simple useful knowledge, for example one of the teachers explained that 'most Grade 9 papers have an electricity account in their exam papers' that students are expected to be able to read.

Having described the curriculum practices of the school, I now turn to a discussion of teacher identities.

7.6 Teacher Identity

Teachers identified with a range of philosophies, ideologies and social allegiances. As in the elite school the majority of teachers at Fernhill had modernist subject-centred identities and strongly resisted the integration of subjects with broader race, class and gender issues and with other learning areas. With the exception of the Art and English teacher, all teachers were retrospective in outlook and identified with modern conceptions of their subjects. As the deputy principal of the school indicated ‘but in a lot of these subjects, the content is fairly universal and does not need to change, Mathematics theorems and mathematics does not change, it is not culture bound, really’. Subject knowledge was being taught as ‘given’, neutral and void of power and authority and far from the fallibilist or social-constructivist philosophy underpinning curriculum policy. These teachers identified with utilitarian or purist ideology. Although they held varying ideology spanning old humanist, progressive educator or technological pragmatism, what was common was that these teachers aimed at teaching the structure of their subjects as pure, given, uncontested truths. The English and art teacher deviated from this norm.

Table 7.9 Summary Of Teacher Identities

Name	Aim	Ideology	Social Group allegiances	Identity
Mathematics (6 teachers)	Ranged from structure of subject to useful mathematics	Ranged from academic purism to utilitarian	Ranged from old humanist to technological pragmatist	Retrospective
Natural Science (3 teachers)	Useful science	Utilitarian	Technological pragmatist	Retrospective
Art	Structure of subject and popular Art	Mixed – academic and utilitarian	Progressive educator	Prospective
History	Structure of the subject	Mixed – academic and utilitarian	Progressive educator	Retrospective
English (3 teachers)	Conflicted structure of subject and popular knowledge	Mixed – academic and utilitarian	Progressive educator	Prospective
Accounting	Structure of the subject	Utilitarian	Technological pragmatist	Retrospective
DP	Structure of the subject	Mixed – academic and utilitarian	Progressive educator	Retrospective

The three English teachers differed in their views. In the 9A class concessions were granted to students' own life-world experiences.

The second English teacher, a former university lecturer, scoffed at the downplaying of formal language skills:

They think that spelling does not count, that if they don't use quotation marks when they are quoting don't worry you will get your marks anyway – and that's not it – if the question says quote you do what the question says – and no long story of maybe if I do this or maybe if I do that – no – there are specific rules and regulations attached to learning language to actually using it properly and we must adhere to it

She resisted the current emphasis on moral values and thought that more spelling, reading, writing, grammar, etc. ought to be taught:

I think they are concentrating too much on things like their moral values and stuff like that – in a school you are still meant to teach – at the moment everybody is so busy with telling them how to lead their lives and all sorts of things like that – fine that is important, yes, but it's not more important than actually educating and teaching them the stuff that's meant to happen in school and with English all the poetry we do you can use that to teach all those moral values and the moral skills and the language skills ...

The Art teacher identified with the post-modern conception of ART and introduced broader race, class and gender issues such as 'women, written out of art history' and the work of Black artists in South Africa. She had included the work of women in art and African artists into her selection of what to teach. She valued art as a discipline:

S: Art is a discipline – where children need to learn some knowledge and then from that they can build their world – through association – any kind of association with terms – even with visual terms they are seeing the world in a new way

Her aim was that students begin to learn the vocabulary of ART:

If they are going to do art as a subject they need to build up an art vocabulary which is quite different to the vocabulary they are going to build up in the English classroom – so if you start off with that vocabulary and you build on it from Grade 8 – then you have something at the end – because it is a visual language and the terminology is different as well – so I think by dealing with the basic issues of art making – the formal elements and then relating it to the practical work they are doing – I am getting much more out of the children

The History of Art was 'very valid because it gave access to society'. Her job as an art educator was to extend the realistic representations of children into more abstract representations. Students also learned skills specific to Art like interpreting visual image; entrepreneurial skills; and technical skills such as wedging clay, the firing process, the temperatures required and glazing.

The Art teacher tried to teach the new OBE integrated art but ‘found it laughable’, ‘a load of bull’, ‘enforced mumbo jumbo’, and rejected it because it was more about ‘language skills, debating, interpreting stereotypes to do with discrimination and racism’ rather than about the discipline of art. She thought they ‘lacked creative input’, were ‘dull and boring’, and ‘cliché and hackneyed’. She resented the emphasis on language skills in the learning programme. According to her the activity on ‘designing a cultural tree in terms of language will be better done in the English classroom – because they were using words and not using visual images’. Tasks such as making a drum, make a guitar, making a mask are repeated over and over – and even the children were quite ‘fed up with making masks’.

So I dropped that completely because it was an absolute waste of time and I went back to kind of introducing formal elements in art-making like subject matter, content ... light, texture, tone, colour – light, all those kind of things.

She found that when students were asked to sketch images from their experiential world she got ‘images of shebeens or the interior of shebeens’. Other popular images were HIV/AIDS related.

Although the science teachers had subject-centred identities, racist ideology coloured the way they talked about students and the kinds of knowledge they taught. Useful science was taught to all students because teachers thought that ‘these’ students firstly were ‘not capable of doing it’ (academic science) and secondly ‘had no use for it’. These teachers believed that ‘you can’t make a child what he is not’. She was happy to integrate science with the history of science, but not with other subjects. They thought that C2005 policy that emphasised the teaching of the science enquiry process through students designing and doing experiments was too ambitious at Grade 9 level. These teachers wanted to teach the ‘body of knowledge’ only. What they actually taught under the section electricity was directly useful knowledge.

C: You know these children need so much guidance – you needed to spend so much time on each group – they are academically a very slow group and they did not know what to do – even after going through the investigation – I spent so much time on it – still hardly anyone could do it – they totally missed the whole

idea – I don't think a scientific investigation belongs in Grade 9 – oh you can start with a basic introduction of this is how you can report it.

L: Yes that's what we would like to do is actually report an investigation.

C: But not design an investigation.

L: actually rating experiments, data and coming to conclusions but just as a silly little aside I have been a senior technician preparing papers for journals and I have never ever had to design an experiment for myself.

C: You know I cannot see what these children are going to do with it – they are not capable of doing it – they are not interested in doing it –

L: Even when they actually physically did it you know I gave them choices in their portfolio and some of them would take one set of beans and put them in the fridge and one in the room and they would bring it to me and I would say lovely, what does it show you? They don't know.

Repeated classroom observations showed the teachers focusing on simple, useful knowledge. Even in the Grade 9A class the class teachers believe to be “academically superior” the same curriculum based on the same LSM was taught. In the 9M class little or nothing was taught and learned because the teacher failed to gain control of the class.

These teachers strongly argued that the more abstract sections were not of any value to ‘these’ students and that science that had real applications was what ‘these’ students would benefit from:

L: I thought that that chemical bonding section although I liked teaching it I really thought it was a bit unfair on the majority of the kids.

C: The majority of the kids although they coped quite well with it but what you really need would be concrete little things because those kids can't think on an abstract level like that.

L: And does your life really improve if you know how atoms join together?

C: I mean what good does it do for the average – because I can think of a lot of things that do make a difference like how washing up liquid works or a detergent or in the field of nutrition – those have got very, very real applications.

In addition to subject ideologies differing there were considerable differences in views of White and Non-White teachers. For White teachers in the study working conditions had gotten worse while for the Non-White teachers many of the working conditions had improved. Teachers described students as ‘rowdy and uncooperative’; ‘wild’; ‘constantly yapping’; ‘uninterested’; ‘demotivated’; ‘simply cannot sit down and listen to you’; ‘immature’; ‘lacking social-skills, self-control and self-discipline’; ‘irresponsible

and in need of constant supervision'; had experience of 'booze, fights and gangs' and 'as disruptive'.

The African and Indian teachers spoke about 'being very comfortable' in the school. Many spoke about the abundance of resources, the greater number of 'free' period and the opportunity to be professionals in this school. They spoke about the much greater support from clerical personnel that typed learning programmes, examination papers and did the duplicating of examination papers and administrative personnel that took care of monitoring attendance of students, collection of fees, and similar administrative details. All they had to do was teach. They also spoke about the numerous opportunities for them 'to take a breath' during the school day when they were 'backstage' and relieved of the pressure of interacting with students as during the weekly reading period when the deputy principal assumed control using the intercom. This allowed them time to 'catch up' on their record keeping. They were very pleased with school finishing at half past one on Wednesday and Friday and that staff meetings were held in this time. They liked the freedom to decide on the 'curriculum in the classroom'. They were happy with the professional relations amongst staff, both peers and superiors.

White teachers were frustrated or demoralised about the drastic changes that had occurred, the 'lowering of standards' and the need to 'lower expectations'. One of the older teacher's comments made this clear:

There was one child who had something stolen from him in my class yesterday – the police were here to take a statement - I never knew police to come into a school before – there is a great deal more lying and cover up of it – I think you have to lower your standards a little bit, lower your expectations.

White teachers emphasised the 'unpleasant teaching conditions', 'discipline problems that students presented', the 'limited knowledge base of students', the 'lack of inquiring minds amongst students', that 'students did not know how to take care of books and lacked responsibility', and that they had to 'lower their standards'. Teachers regretted the 'lowering of standards', and 'efficient teaching they were used to':

I think if you stay here you got to be resigned to the fact that there are hordes of children and too many for the efficient teaching we used to be able to do years ago when there was a good physical limit on the numbers in the class, so it's disappointing in terms of the teaching one can do and from the requirements and it is also disappointing from the output you will get from the children and also there is an attitude you will find in any classroom - lucky if a quarter of them do homework and that's not only in mathematics, it's generally so there does not seem to be that pride in learning and in knowledge

Teachers spoke about 'students being drunk over the weekend and 'sleeping if off in class', 'a few students don't attend school when soccer matches were on'. Students were seen as marginally interested in schoolwork, 'their prime focus is food, clothes and girlfriends and boyfriends'. According to these teachers students used the school and classroom to 'socialise' as their parents did not allow them out on the weekends. Students' home environments were perceived by teachers to be 'too controlled' as the following remark shows: 'the home environment is too rigid and controlled and much chores need to be done'. Teachers complained about students 'poor work ethic and that 'they study a day before the exams'.

Students were cast as being in deficit and lacking much. Students' academic skills were regarded as very poor. Teachers thought that students did not read well, their number skills were very limited, they did not know enough to participate in group work, they didn't have anything to share', and were not observant. Students were seen as not having the intellectual power to carry on and thus got easily frustrated and bored. In short, students were seen as 'not academically orientated'. For example, one of the mathematics teachers spoke about how meaningless mathematics was to them:

Who cares if 8 times 4 is 32 or not, it does not mean anything to them even when they hear it should be 32, it does not really matter if 2 and 1 is 3, who cares if it is 3 or not?

The Indian HOD of the commerce department thought that the nature of the students was a 'plus' and a 'strength'. He thought that the main problem in the school was 'not the students' but the 'negative attitude of management towards OBE'.

D: Some of the teachers are really battling with the way the students are – like they are a bit boisterous and ...

P: But that is one of the plusses of Fernhill – these learners are quite extrovert – they don't shy away and keep quiet – not like the old African rural guys who always respect you – these are city people and they are quite aware of the changes – aware of grassroots and street dynamics – they know what's happening – we don't know what's happening and we can't treat the children according to our mindsets, our thinking – their background is stable and strong – but these learners are also quite independent they know their rights – they know that they are future leaders, they know that – that's the plus of the learners, they know that –that's what I like about this school, the learners are not a problem – it's the administration that is a problem – these learners will survive - at Fernhill all will survive

The African and Indian teachers were unhappy about the lack of racial desegregation of the management and administrative staff.

While the material working conditions in the school were excellent to teach in, Non-White teachers struggled with their awareness of 'just how privileged they were at Fernhill' and the gross injustices prevailing in schools in their own areas. As the commerce HOD an ex-HOD educator disclosed that the large number of non-teaching periods for both level 1 and 2 teachers was 'very comfortable'.

P: I am not ready for this kind of set-up, this kind of South Africa – I probably got too much hate in my head from the struggle days and I see all the injustices here – all the privileges enjoyed that the majority don't have – maybe I have become more prejudiced than anything else. But I can be very comfortable here – in fact I am already so comfortable.

The sense of community that develops amongst people who work together was fractured along race lines.

7.7 Summary Of Curriculum Practices And Teacher Identities

Table 7.7 summarises the diverse curriculum practices across teachers for Grade 9A only. There was not a single criterion in which all teachers were the same. Five clusters of practices were identified with greater similarities within each cluster.

7.7.1. Cluster 1 Mathematics, Accounting, Computer Literacy

In cluster 1 made up of mathematics, accounting and computer literacy: specialised subject knowledge and skills were taught; teachers maintained strong classification and framing relations; used conservative pedagogic strategies; made the epistemic operation of their subjects explicit; had modernist conceptions of knowledge; knowledge was presented as neutral and void of power relations; teachers expected high-order cognitive competences of students; maintained authoritarian and positional social relations with their students; and assessed students on complex cognitive competences using formal tests and examinations. The three teachers held purist ideologies and retrospective subject-centred identities.

7.7.2 Cluster 2 Science

Utilitarian knowledge and skills was taught; the teacher maintained weak classification and framing of academic science knowledge; used conservative pedagogic strategies; the epistemic operations of science was obscured; reduced science to what was immediately useful in the real world; seemed to be motivated by simple modernising aims; expected simple low-order cognitive competences of students; attempted to maintain personal social relations with students, but lost control in every lesson; and assessed simple cognitive competences in tests and examinations. These teacher held very strong racist ideological beliefs based on the innate ability and belief that students were neither 'capable' nor had any 'use for' academic knowledge. Racist ideologies conditioned the knowledge taught.

7.7.3 Cluster 3 English

A mixture of specialised subject, popular and utilitarian knowledge was taught. Classification and framing varied across and within lessons. The teacher used a mixed pedagogic practice: ranging from conservative visible pedagogy to radical visible pedagogy. The epistemic operations were mixed – traditional knowledge and individual

constructions were affirmed. The cognitive demand ranged from simple to complex, high-order cognitive skills. A range of assessment strategies was used comprising formal assessments in tests and examinations and informal assessment of students' oral and written constructions. Personal relations were observed. This teacher reflected elements of a prospective identity.

7.7.4 Cluster 4 Art, History

Specialised subject knowledge and skills were taught followed by application to the students' own everyday world. Classification and framing were strong. Teachers had established personal relations with students. The teachers used a mixed pedagogic practice ranging from visible to invisible. The history teacher demonstrated visible radical pedagogy. Students were observed to be framing their talk within the historical topic being discussed. The epistemic operations of the subjects were explicit. Complex cognitive competences were assessed both formally and informally. In art students' individual constructions were judged on the basis of traditional knowledge. Of all the teachers in the study it was only the art teacher, who was White and female, who had kept abreast with post-modern developments in the subject and had brought in post-modern issues of 'women in art' and Black South African artists. This teacher showed elements of post-modern prospective subject-centred identities.

7.7.5 Cluster 5 Home Economics and LO

In these lessons utilitarian knowledge and skills for practical and moral outcomes were taught. As in Science, the topics were integrated and required students to integrate knowledge from different fields. In HE students were expected to prepare and present a meal. In LO the topic was teenage pregnancy and premarital sex. Classification was weak while framing was strong. Teachers had established personal relations with students and often lost control of students. The epistemic operations of the 'subjects' were explicit. What students 'ought' to choose to do was made clear. The teachers showed elements of retrospective identities.

7.8 Conclusion

The defining attribute of the integrated code is its less rigid social structure that arises from both the structuring of knowledge and the organisation of social relationships. The actual curriculum of the school – curriculum structure and curriculum practices – showed that curriculum integration was neither intended nor practised. The curriculum structure predisposed a rigid social structure in which strong classification of knowledge predetermined separatist educational relationships. In terms of the classificatory structures underpinning the curriculum strong intellectual, social and procedural boundaries were being maintained. Thirteen strongly classified subjects were offered; with the exception of a choice between Afrikaans and Zulu, students had no options; in terms of time allocations a few subjects were given very high status; the timetable was rigidly imposed; students of varying academic abilities were homogeneously grouped into different classes; and space was strongly classified and used in specialised ways.

These strong boundaries prevented the integration of subjects, of teachers of different subjects and of students of different abilities. Further, students were given no choices what, when and where to study. These features indicate that firstly, ‘things were being kept apart’ rather than being ‘brought together’ and secondly, opportunities for students to negotiate the structures and make choices were non-existent.

The classroom framing practices of teachers maintained the classificatory structures. The subjects were strongly insulated. Within subjects, sections themselves were strongly insulated and unrelated to each other. Teachers could and would have relayed the power relations were it not for students from whom strong opposition to the school’s discourse surfaced. Social boundaries between teachers and students were either authoritarian or dysfunctional with both impacting on the quality of the teaching and learning process. The individualistic conduct and manner of students obviated communal agreement such that the absence of regularized or routinised social control and positioning practices were

often challenged by students with the result of teacher talk being largely directed to establish control and order. The mediation of knowledge and skills were secondary. The visible, conservative teacher-centred pedagogy used by the teachers was a response to facilitating control rather than educative processes.

7.9 Section C Interpretation/Re-Interpretation

The heterogeneous population of the school in social class and race terms was described in detail in Section A and a formal discursive analysis was done in Section B. A re-interpretation based on the socio-historical and formal-discursive analysis is presented in the next section in an attempt to explain the network of causes contributing to the dominant ethos at the school such as: retrospective leadership, management and teacher identities orientated to benignly assimilating students into traditional ways of ‘doing things’; *laissez-faire* regulation of the curriculum where teachers were autonomous and free to decide individually on what and how to teach; reactionary and symptomatic management of problems of order and control; teachers’ narrow constructions of students based on what White and middle-class students were willing and able to do; and teachers’ modernist conceptions of traditional knowledge.

Jansen (2004) identified four levels of integration: racial desegregation; staffing integration; curriculum integration; and institutional culture integration. He argues that schools struggle with migration towards higher levels of integration. Unlike the other two schools in the study, Fernhill had made significant progress in terms of racial desegregation of students and level one staff. The school had achieved, what Jansen (2004) refers to as the lowest and easiest level of integration, racial desegregation, as well as gender desegregation. From 1991 and 1992 the school opened its doors to other races and to girls respectively. ‘White flight’ took place to such an extent that by 1998 the school had a dominantly African student population. Many of the staff reiterated the view that they ‘were an African school now’.

But, beyond the racial desegregation of student and level one staff, inertia characterised the school. The school was stuck at the first and easiest level of integration. Over more than ten years of racial desegregation hardly anything had been achieved with reference to the second, third and fourth level of integration (Jansen, 2004).

While significant progress had been made with regard to racial desegregation of level one teacher, the second level of integration 'staffing integration' was not proceeded to. Although African teachers had been appointed they were visibly marginalized and overlooked by the school. They had been hired to teach Zulu in most cases, and History in the case of two teachers. All African teachers seemed disempowered and did not contribute to school leadership and management. African teachers were alienated and were ostensibly being assimilated into the traditional culture and ethos of the school. Then, racial desegregation management staff was minimal.

That the school culture was retrospective and based on what previously advantaged White and middle-class students were willing and able to do, was seen in the curriculum structure, curriculum practices, teachers' identities and teachers' expectations of students. The actual curriculum of the school – curriculum structure and curriculum practices – showed that curriculum integration was neither intended nor practised. The curriculum structure predisposed a rigid social structure in which strong classification of knowledge predetermined separatist educational relationships amongst staff. In terms of the classificatory structures underpinning the curriculum, strong intellectual, social and procedural boundaries were being maintained. These strong boundaries prevented the integration of subjects, of teachers of different subjects, and of students of different abilities. Further, students were given no choices as to what, when and where to study. These features indicate that firstly, 'things were being kept apart' rather than being 'brought together' and secondly, opportunities for students to negotiate the structures and make choices were non-existent.

The classroom framing practices of teachers maintained the classificatory structures. The subjects were strongly insulated within the classroom. Within subjects, sections

themselves were strongly insulated and unrelated to each other. Social relations between teachers and students within the pedagogical context were either authoritarian or dysfunctional with both impacting negatively on the quality of the teaching and learning process. The lack of communal agreement to facilitate regularized or routinised functional social relations resulted in much teacher talk being largely directed to establish control and order. The mediation of knowledge and skills were secondary. The visible, conservative teacher-centred pedagogy used by the teachers was motivated by control rather than by pedagogic motives.

In opposition to integration of subjects into LAs the school timetabled seventeen high-status and low-status subjects. While the post-modern blurring of boundaries between subjects was advocated, teachers maintained impermeable boundaries between their subjects and others. As an established and privileged school teachers were accustomed to exercising considerable autonomy over what and how they taught. Under the changed circumstances teachers still autonomously decided on what and how to teach. The strong insulation of teachers created 'private spaces' for teachers to be fully autonomous. Such 'private spaces' allowed practices in which teachers' racist ideology could be realised and in which controlling students became an end in itself.

In terms of pinning down the illusive notion of institutional culture Jansen's (2005) list in decoding institutional culture was informative. Despite the overhaul in its student population, the institutional culture of the school by 2003 still projected many Anglo-centric or South African White symbols. Visual images, such as the original life-size portrait of Queen Alexandria adorns one of the walls of the school's media-centre. The central feature on the school's blazer badge was taken from the royal coat of arms of this queen. The five sports houses that were named after key historical figures, all White, remained the same. The symbol of each house flag that were derived from symbols personally relevant to each of these individuals remained the same. The portraits and paintings of key historical figures that hung in the corridors were bold statements of the school's history that meant insensitivity to its current student constituency. White parents dominated the school's governing body. African parents were observed to be visibly

alienated at school functions. African parents who attended school functions were 'given the cold shoulder' and were observed to be very 'out of place'. The English language dominated public meetings and events, although the majority of parents in attendance were Non-White. All signage at the school was in English. Daily talk showed considerable positioning of students and parents as 'other'. Adversative pronouns, conjunctions, metaphors, and vocabulary were often used. The identities of parents clearly did not fulfil the school's expectations. If there were visible signs of the school not being for the present group of students the lack of the intangibles such as a sense of community, caring, respect, love and understanding was undoubtedly ever-present. The retrospective institutional culture that the school projected was far off from an inclusive institutional culture that would make the majority of African students 'feel at home'.

Goodson (1987) noted teachers' subject socialisation as a major agency of control. Appointments in the school depended on teacher qualifications. All teachers in the study were appointed on the basis of at least a degree in the subject they were to teach. Many held post-graduate degrees as well. As in the independent school the teachers at Fernhill were all highly qualified; and showed close correlation between favourite subjects as school pupils, major subjects at tertiary level and teaching subjects at school for all eight teachers. There was a smooth progression through stable and strong socialization into subject-based identities first at school level, then into major subjects at tertiary level and then teaching their subjects for up to 20 years.

The majority of teachers' subject-centred identities were based on modern conceptions of knowledge. Their subject identities, a function of their qualifications, greatly assisted their assimilation into the school's dominant goal of privileging academic and the exclusion of social goals. With the exception of the Art and English teacher, all other teachers shied away from race, class and gender issues, thus teaching the traditional cannons as uncontested and true. Even in Art, where students were asked to sketch their realities, students produced images of 'shebeens', the 'inside of shebeens' and HIV/AIDS posters. Teachers were largely autonomous in deciding on what and how to teach.

White and Black teachers experienced the school differently. For White teachers in the study, working conditions had become worse while for the Non-White teachers many of the working conditions had improved. White teachers were frustrated or demoralised about the drastic changes that had occurred, the 'lowering of standards' and the need to 'lower expectations'. White teachers emphasised the 'unpleasant teaching conditions', 'discipline problems' that students presented, the 'limited knowledge base of students', the 'lack of inquiring minds', and that students did not 'grow up with books', 'did not know how to take care of books', and 'lacked responsibility'. They were resigned to never experiencing the 'efficient teaching they were once used to'. The African and Indian teachers spoke about 'being very comfortable' in the school. Many spoke about the abundance of resources, the greater number of 'free' periods and the opportunity to be professionals in this school. They spoke about the much greater support from clerical and technical personnel that typed learning programmes, examination papers and did the duplicating of examination papers and administrative personnel that took care of monitoring attendance of students and the collection of fees. African teachers feared loosing their jobs or 'being worked out' if they were perceived to be loosing control of classes judged by the amount of 'noise' the teacher's classes made.

So while the school 'was an African school now' nothing else had changed to accommodate the changed complexion of the student body. Benign assimilation of students into the established culture and traditions of the school seemed to be the principle underpinning leadership and management in the school. The leadership and management of the school, firmly in White hands, were orientated to assimilating African students into traditional practices of the school developed with previous generations of mostly White students. The management did not themselves know how to transform the institutional culture of the school such that it suited African children (and it would be unfair to expect them to) but did not create the conditions for African teachers and parents to participate in and effect transformation. African teachers and parents had no effective say. Jansen (2004) has critically described the impact of institutional cultures that fail to affirm African students:

It is in this domain of institutional cultures, that educational institutions fail to include, accommodate and affirm racial diversity and difference, and community and commonality. It is in this domain where the assault on the cultural senses of incoming African students conveys powerful messages of who the institution is for. (*Idem:123.*)

There was no way that the African students, as empowered as they were, would be oblivious to the alienating institutional ethos of the school. Overt contestation and conflict characterised student-staff relations. One could speculate that the strategy of benign assimilationism, (Soudien, 2004), was clearly being aggressively resisted by students. The democratic structures that were set up such as the Representative Council of Learners were not capacitated nor empowered with the task of being cultural intermediaries.

If leadership in transforming the institutional culture of the school was lacking it was also lacking in any proactive planning at school level to address the lack of order and control that plagued all teachers. Serious conflict prevailed between the sub-culture of the pupils and the classroom culture that the teachers yearned for. Students were to a large extent self-regulating, but this did not conform to expectations of teachers who expected students to listen and accept their views. The huge divide between what pupils thought about themselves, education and their teachers and what teachers believe about the same, created a constant ethos of struggle in the classroom.

All teachers irrespective of race thought that the 'discipline crisis' resulted from students' deviance. Much staff and managements attention was taken up by 'battling' with and managing 'students who were challenging the system'. Curriculum development, mediation of knowledge and reflection on it was obscured by the 'uncooperative attitudes of students'. Curriculum matters paled in significance and were secondarily discussed. With reference to the lack of order and control in the classroom, a large part of the problem stemmed from organisational arrangements.

Another contributing cause of the control problem seemed to be the very large class sizes in the school. The classrooms that were designed for 25 students at most had the

appearance of being overcrowded as an average of a minimum of 40 students sat right up to the board and to the teachers' table. The large class sizes had a deleterious impact on both progressive teaching styles and on establishing order and control in the classroom. Any kind of learner activity involving discussion very quickly degenerated into chaos and noise. One consequence was that the majority of teachers did not use progressive pedagogic strategies such as the social construction of knowledge at all.

In spite of appointing altogether fifteen governing body teachers and HODs, the student-teacher ratio was not altered in comparison to other schools with fewer teachers. As far as I could see, the micro-politics in the school conditioned the deployment of the extra fifteen teachers. Pillay (2004) cites Innaccone who describes the quiescent political processes of day-to-day allocation of stakes that are largely routine, but one of the key micro-political acts in schools. The additional fifteen teachers in the school could have been used in many different ways. They were deployed to maintain lower teaching loads of level one teacher, and of lower, middle and senior management staff. The privilege was gained by reducing the total number of classes that meant increasing class sizes. Teaching loads of staff were reduced cumulatively up the hierarchy with teachers getting at least one non-teaching periods a day, HODs at least two and the DPs much more. The Principal did not teach at all. These privileges absorbed the fifteen governing body teachers. The large number of administrative support staff further eased the workload of level 1, 2, 3 and 4 educators. The extra academic and support staff made a difference to the workload of level one teachers and middle, upper and senior management but little difference to class sizes and to students themselves. As in the past, the non-teaching periods enjoyed by level one teachers, lower, middle and senior management were still being enjoyed. The school fees revenue improved the working conditions of staff but did not reduce teacher-pupil ratio. Fiske and Ladd (2004) indicate that lower teacher-pupil ratio is a key factor in improving the performance of students. The trade-off of more non-teaching periods for larger classes was clearly not having the desired result – the majority of teachers were disillusioned, and engaged in self-defeating negative discourses and constituted themselves as victims at the mercy of students. Teachers themselves saw the intolerable situation as a function of the culture of the students rather than an

organisational function. To cope with the situation, teachers had lowered their standards and expectations in terms of their academic requirements, had adjusted to becoming 'policemen', and control was prioritised over learning.

The strong framing maintained by most of the teachers between specialised subject knowledge and the everyday, community knowledge of students conveyed to students that their own 'worlds' were not what school was about. The actual curriculum of the school was observed to be an 'alien and alienating edifice'. Strong opposition by students, in various forms, to the school's formal curriculum in the classroom seemed to be the norm. Teachers commented on how students insisted on being called by their African names and of accepting English as the MOI, but not accepting of the culture.

Bourdieu (1993) argues that habitus includes the habits the school provides in terms of dispositions, as well as particular patterns that can be applied in different areas of thought and action. The habitus at Fernhill, the ideology of innate ability and talent that was commonly accepted by all the teachers at Fernhill militated against high academic standards. Teachers lacked understanding of recent social-psychological theories of learning based on the concept of access to and participation in academically valued social practices and the discourses by which they are constituted.

The conscious lowering of academic standards by teachers denied students access to achieving high academic standards. Then, deep-seated inequalities in access to knowledge were institutionalised by the practice of stratifying students according to ability into homogeneous class groups that were taught different knowledge differently. In the lower ability classes, teacher interactions were less demanding of high order cognitive skills, were less academically orientated and focused on keeping students occupied with repetitive, routine simple skills and procedures. Students in upper and lower ability classes wrote different examination papers with the high ability class being assessed on academic knowledge and skills and the lower ability class being assessed on low order simple cognitive skills with direct utilitarian application. The differential offering of valued areas of knowledge had become naturalised. The implications of such

practices for social stratification have been researched by Gamoran (1992) who found that students in lower tracks ultimately achieve less than similar students who are placed in academic or untracked classes and Oakes (1992) showed the link between students in the lower tracks with low-status occupations.

It must also be borne in mind that the matriculation pass rates at the school have been excellent. The classes being described are Grade 9 classes and not matriculation. Before Grade 9 students reach matriculation, they have been subjected to much streaming and grading into higher or standard grade, senior certificate or university exemption, into higher-status science courses, commerce courses or lower status general curriculum packages. The immediate impact of Grade 9 was the stratification of students into different streams in Grade 10 that are not neutral but imply access to stratified fields of study with differing power, prestige and opportunities in the future.

Greene's (1971) notions of intellectual egocentricity and epistemic subject are informative in understanding the student sub-culture. Drawing on Sartre, learning for Greene (1971) is a meaning making process comprising of disclosure, reconstruction, generating structures, engendering meanings and as achieving mastery. Continual reconstructions are necessary for the curriculum to become meaningful. The learner 'lends his life to the curriculum' and brings something into being by going beyond the text. A learner who creates meaning is recreating or generating the materials of a curriculum in terms of his own consciousness. This becomes possible when the learner subordinates his own personality, and 'brackets' out his everyday, 'natural' world. This demands what Piaget called a 'continual decentering' without which the individual subject cannot become free from his intellectual egocentricity and become the epistemic subject. That students resisted moving from 'individual subjects' to become the 'epistemic subject' was clear. What made students who came regularly to school and up to the last day, paid high school fees, travelled a great distance by public transport, walked a great distance to the school, wore the school uniform, played the sport chosen by the school, belonged to sports houses named after White educators of the school and who from management points of view 'loved' school, act up like the way they did? To

really get at the bottom of the causes of such ‘contestation’, ‘resistance’, ‘rebellion’ or ‘laziness’ on students’ part was beyond the scope of this work but needs to be thoroughly studied. What was conspicuous by its absence was the kind of school community that would affirm the new students such that they ‘feel at home’. The institutional culture deduced from the visual images, discursive practices, signage, social integration, social interactions that build a broader sense of compassion and community or in Hargreaves terms ‘learning to live together’ was missing. In the current situation both students and teachers appeared to be losing.

Since students themselves were not the unit of analysis I could only speculate about the students’ sense of the situation. One explanation could be that students were reacting to the hidden curriculum passed on by the curriculum and institutional culture and ethos of the school. The stifling of students’ sense of who they are found expression in the classroom where collectively they could hold teachers to ransom according to their own whim and fancy, as destructive as this was for both parties. Research into this would throw much light on the situation.

7.10 Conclusion

At Fernhill where much racial desegregation had been achieved amongst students and staff, staffing integration, curriculum integration and institutional ethos integration was lacking. The bureaucratic leadership and management of the school was orientated to assimilating African students and teachers into traditional practices based on the needs of its previous students who were White middle-class boys. In spite of the abundance of resources, highly qualified teachers, politically empowered students who spoke English fluently, teaching did not proceed smoothly. The revenue from fees charged enabled many governing body teachers and support staff to be hired but did not alter the large class sizes. The collection code indicated by strong classificatory features was the school’s intended curriculum. Students seemingly opposed the school plans and conflict, contestation and flagrant disregard for teachers’ authority in the classroom was the norm. Much to the chagrin of teachers, teachers’ strong-subject centred identities were

subsumed by control difficulties that students presented. White teachers' expectations of students and parents based on what White and middle class students and parents were willing and able to do fuelled much contestation and conflict. Other than implementing 'dictated curriculum change' *laissez-faire* regulation of the curriculum at school level allowed teachers much autonomy in deciding what and how to teach.

Teachers had intentionally lowered their academic standards, unconsciously harboured racist thoughts, resented spending much class time regulating the behaviour of students, and were demoralised. The conscious lowering of academic standards by teachers denied students access to achieving high academic standards. Then, deep-seated inequalities in access to knowledge were institutionalised by the practice of stratifying students according to ability into homogeneous class groups that were taught different knowledge differently.

National curriculum policy advocated the integration of subjects into eight LAs. Like Rosewood the curriculum structure at Fernhill was characterised by excessive fragmentation into sixteen subjects. Teachers tried very hard to teach their subjects to students in progressive ways but resorted to conservative pedagogy for fear of losing control. The high degree of autonomy enjoyed by teachers enabled the classroom in the case of science as a 'private space' for racist ideology to over-determine what knowledge was suitable for students. Generally teachers were busy with pacifying rather than educating and liberating. Students actively and passively aggressed teachers and did not acknowledge their authority and it seemed resisted acquiescence. Conflict and contestation was common and teachers were demoralised.

A number of concerns are raised. Firstly, the depression of epistemological curiosity typified the educative process at Fernhill. For Paulo Freire (1998) the kindling of epistemological curiosity was what education was all about and the epitome of negation in the context of education, the stifling or inhibition of curiosity in the learner, ultimately served to stifle the teacher too. That teachers consciously did 'not pitch for high academic standards' had consequences for both teachers and students. For the majority

of students intellectual enhancement and epistemological access to specialised discourses was hampered. Of all classes observed it was only in the History class, with the African history teacher who initially was disrespected by students on account of his African accented use of English, that students were cognitively engaged and visibly interested in the lesson. They participated actively, asked questions, debated issues and challenged each other's views. In other lessons across the subjects, students were apathetic and openly disinterested. Teachers themselves taught without a sense of plausibility (Prabhu, 1990) and appeared to be, and admitted to being, demoralised.

Secondly, the pedagogy of hope and freedom was missing! The lack of warmth, care, joy, love on the part of teachers was clearly evident. Dewey referred to 'the collateral learning of attitudes by children' and Reid (1972) defined the hidden curriculum as 'as those socialising practices that are not included in the official curriculum but that contribute towards the reproduction of culture. To what extent the hidden curriculum conveyed by teachers who resented much, was being sensed by students? The semiotic messages evident from teacher's facial expression alone spoke volumes. Then, teachers held egregious racial stereotypes such as 'what they really need would be concrete little things because those kids can't think on an abstract level', 'does their life really improve if you know how atoms join together' and 'these kids are not academically orientated' indicated their retrospective ideologies based on concepts of innate ability and talent. With reference to being required to design, carry out and report an investigation a teacher responded 'you know I cannot see what these children are going to do with it – they are not capable of doing it'. The teachers have decided what the learners will be and therefore what knowledge they need.

Thirdly, the lack of any proactive management led steps to address the control difficulties that faced all teachers was a mystery. Why, in a school with such high level intellectual capital was nothing being done about students inappropriate self-control and positioning practices that negated intellectual enhancement? Iedema (1996) recommended that in cases where the students' coding orientation lack accepted registers of control, 'rather than leaving the acquisition of these sophisticated kinds of modulation up to chance, as is

the case in current educational practices, they could be made 'visible' and programs could be devised which explicitly deal with modalities and realizations of control and with teacher-student relations, benefiting those whose social backgrounds do not operate within such highly time-distanciated modes of interpersonal control'. In addition to social class factors racial expectations and assumptions should be aired with the aim of establishing communal agreement and inclusivity.

Many of the practices of the school were a friendly and implicit denial of 'other'. The institutional culture of the school was retrospective and not inclusive of Black students. Apart from cultural evenings and the 'hip' choir the cultural diversity of learners was not acknowledged nor affirmed.

At Fernhill the curriculum served the end of social control through the selective development of particular knowledge, skills, aptitudes, attitudes and dispositions in children. Thus Grade 9 curriculum practice was significant as it related to positioning students in the different strata that were part of the organisational structures of the school. The lack of 'unity in diversity' and sincere respect for and accommodation of otherness proved to be the Achilles heel of the school.

CHAPTER 8

THE EX-DET SCHOOL - STRELITZIA

This chapter presents the findings of the disadvantaged school, referred to as Strelitzia, in three sections. Section A presents a socio-historical analysis. Section B presents a formal-discursive analysis and Section C presents an interpretation re-interpretation of the curricular practices in the school.

8.1 Section A - Socio-Historical Analysis

The third school, referred to here as Strelitzia, was established by the Apartheid 'Department of Education and Training' for African children. The school is located in a former African group residential area, colloquially known as a township. The township was developed as a residential enclave for Africans living in very poor conditions in informal settlements, as in the early 1920s Africans had no official residential area within the municipal area. During the period known as the 'struggle' against apartheid, particularly in the 1980s vandalism of school property and harassment of teachers was common as the school and teachers were targeted as symbols of Apartheid.

In contrast to both Rosewood and Fernhill that were historically advantaged by Apartheid and were stable, peaceful and ideal sites for learning, Strelitzia, an urban secondary school for Black children was a site of struggle against apartheid laws.

Unlike the other two schools in the study where the school's history was prized and taught to students, Strelitzia did not have historical records. On asking about whether the history of the school was documented, the principal referred me to the Humanities HOD who said that the school magazine had details about the school's history. Nobody could lay their hands on this magazine. It was decided that possibly one of the students might have a copy of the magazine. A student finally managed to find the magazine. The brief

history recorded in the magazine produced to celebrate the school's 10th anniversary showcases the contribution of specific individuals.

The school was established in 1949. The history that is recorded is restricted to details about specific officials, for example, 'the first principal was Mr X born at Mzinyathi', 'the school inspectors were... and other notable teachers were...'. Most of the comments relate to contributions in the field of art, music and drama, for example, 'his contributions were music (jazz), playing the piano, debating societies, jazz groups – hermonettes, jazokiks, playing the saxophone'.

The calamity of the school burning down in 1959 is dismissed with 'in 1959 the school burnt down and the standard dropped'. The school excelled in soccer, netball and music. The historical record indicates a principal who took over during a very challenging time of political unrest. The rest of the historical record lists names of principals and teachers in the school up to the present. The school's history has not been recorded and no effort is made to reconstruct the past or record significant events presently. To get a sense of the political struggle that was the main part of the school's history, two other sources, i.e. the municipal reports (Strelitzia Planning Initiative, 1994) and research undertaken by Gultig and Hart (1990), were informative.

A brief history of the township (Strelitzia Planning Initiative, 1994), within which the school is located and from which the majority of students come, is briefly described as it impacted directly on the school. The history of the township is associated with socio-political factors rooted in the racially based laws that governed its origin, development and growth and in resistance and struggle to such injustices. With the Group Areas Act in 1950 that solidified the policy of racial segregation, the building of the township was brought to a halt and people were earmarked for ultimate removal. Residents were relocated to the township of Imbali that was established in the 1960s. Dzebu (1990) researched the impact of forced removals on education and concluded that the education of Blacks who were the victims of forced removals had been adversely affected and disrupted. The context included migrant labour, poverty, disease and inadequate

schooling facilities. For the remaining residents much was deliberately done to make life unbearable, rentals were introduced and home ownership was ruled out and the government threatened to impose an extra charge for electricity, an increase in 'Bantu General Tax' and a further education levy. Whatever infrastructure there was, was allowed to deteriorate. This sparked violent protests from the community. Community political and civic structures evolved to struggle for better municipal support.

By 1994 there were as many informal shacks as municipal residential buildings. A common practice amongst residents was sending children away to better, safer areas and renting out rooms for which there was great demand. Children as young as six were earning an income.

The community viewed the school as an instrument of the apartheid government and as an institution to be distrusted and scorned. Vandalisation of school property and its facilities were common and had reached high levels. The security firm hired by the DOE to guard the school was not acceptable to the community. The community harassed parents who volunteered to assist with security. There was overcrowding in the primary school. The HSRC survey cited in the report indicated that 'at the high school there was a shortage of teachers for specific subjects like Maths and Geography in 1991'.

Gultig and Hart (1990) examined the effects of the conflict on schooling in the townships in Pietermaritzburg where youth organizations and COSAS 'had mobilized in schools' (*idem*.2). The political struggle was compounded in KZN by the rivalry between the ANC and the Inkatha Freedom party. They argue that 'historically most organisations of people's power in the schools ...moved directly into the political realm'. Students and teachers suffered, their lives were threatened and many were killed or arrested. They show that the violence brought large-scale dislocation in its wake. Increasing mobilization, school boycotts and student called stay-aways brought violent reprisals from Inkatha-supporting vigilantes. Students were directly drawn into and became part of wider conflicts. 'Whereas much of the violence in the country had subsided by 1988, it was still raging in the Pietermaritzburg area by the end of 1989'. They conclude:

Clearly, then, the lives of the majority of school children in the area have been characterized by severe disruption of their schooling and their personal lives. They have witnessed, initiated, and been involved in acts of violence on a large scale and their schooling has taken place in an atmosphere of fear, hostility and suspicion. (*Idem*:11.)

The school and teachers were targeted as symbols of Apartheid. Teachers who were forced to carry out unjust regulations were harassed to the extent that 'a number of teachers stayed away'. Gultig and Hart (1990) concluded that 'the present conflict in the Pietermaritzburg area has left teachers demoralized and on the defensive, sticking rigidly to prescribed syllabuses and isolated from their pupils' (*idem*:1).

8.1.1 The School Today

The effects of the immediate past history of Black schools, one of dislocation, disruption and strife as sites of political struggle, were evident. Unlike other Black townships that were located much further away from urban centres, the close proximity of the township to the city centre may be explained by its location near a heavy industrial area that drew its unskilled labour from the township. While the situation of the township is favourable for the use of the urban infrastructure and facilities, the site of the school flanked by the heavy industrial area, the municipal dump, a squatter settlement and a working class residential area is clearly undesirable from both an educational and an aesthetic point of view. The contrast between the independent school 'a little England in the veld' and Strelitzia was stark. The drive up to the school included a variety of unpleasant sights – excavations, untended long grass, litter and dumped shells of cars. On many days during fieldwork a strong sewer smell permeated the atmosphere. The three schools in the study are probably around three kilometres apart 'as the crow flies' but further in road distance.

There were no illusions about the purpose of schooling as the following statement from the mission statement reveals 'we strive to produce multi-skilled youngsters who can take their place with pride in the workplace'. In a community where unemployment was historically the norm it was no wonder that the school made skilling for the workplace its

main purpose. The mission statement was divided into four parts addressing country, pupils, local community and staff. As can be deduced from the mission statements social and community needs were emphasised.

- Our mission to our country is to be proactive, and effective in meeting the society's needs for relevant secondary school education.
- Our mission to our pupils is to strive to provide the best and most suitable tuition possible and to promote the status of their secondary school education.
- Our mission to the local community is to help wherever possible with our facilities and expertise to improve the quality of their lives and thereby to make them proud to have this school in their midst.
- Our mission to our staff is to provide, through a stimulating and satisfying work environment, a sense of job satisfaction.

The majority of parents could not afford the school fees of R200 per annum. The class observed had 23 pupils. In the class observed 81% of the pupils came from homes where both parents were unemployed, 17% were employed in unskilled jobs and 2% were professionals. According to the teachers most of the students live with their grandparents and survive on their pensioner grants, on child welfare grants and on income they themselves earned. The non-payment of fees confirms Fiske and Ladd's (2004) findings of the situation in poor schools. Principals of poor schools reported major difficulty in collecting their fees and, in spite of time and effort, only a small minority paid fees. Although the school had a right to sue non-paying parents, it made little sense when it was clear that parents could not afford it. Whatever the cause, such as the impact of the AIDS epidemic and the lack of jobs, the socio-economic conditions within the township seemed to be deteriorating.

Social problems experienced by the school include substance abuse and carrying of weapons. The police were allowed to conduct a 'raid' searching students and the school for illegal weapons and substances.

There were 850 pupils at this school and 22 teachers. Prior to the government-initiated 'restructuring and redeployment' programme the school had an academic staff of 34. As a result of the redeployment exercise the school lost 12 teachers. The principal's comment 'our status of being permanent not only to the Department of Education but also at our schools has changed to a nomadic status' indicate the effect on teachers generally. The process left 'a number of despondent and de-motivated teachers'. The principal surmised that the process had good intentions but had left irreparable damage in terms of human relations.

The official medium of instruction was English although code-switching to Zulu was common.

Matric pass rates were low at this school as can be seen from the pass rates for the last five years that had been posted on the school's web page.

- 1998 – 33%
- 1999 – 25%
- 2000 – 52%
- 2001 – 58%
- 2002 – 34%
- 2004 – 44%

The figures show that Matric pass rates have fluctuated over the last few years with the pass rate in 2002 being 34%. There were 129 Matric students, of which only 44 passed and there were only two exemptions. The curriculum packages offered to Matric students in 2002 at the school were limited to commerce, science and general subjects. In 2002 14% of Matric students were doing Commerce, 25% were doing Science and 61% were doing General subjects. Of the few who passed, very few passed maths and science. Of the fifteen students who did physical science, only ten passed. Of the thirty-three students who took mathematics, twelve passed.

By 2004 slight changes had occurred in the Matric pass rates and the quality of the passes. Of the 94 students that enrolled 88 students wrote the examination. Of those that wrote 50 students or 56,8% passed and 43,2% failed. Of those that passed there were 3 or 3,4% exemptions and 47 or 53,4% senior certificates.

The school buildings were of good quality and many specialist rooms had been designed. During the time of the fieldwork there was a serious ongoing crisis in the school relating to threats from the municipality to cut electricity supplies. This school was one of the schools referred to in *The Witness* 24/01/2003 and in the *Echo* 06/02/2003.

Govt. must help!

The non-payment of school fees has stirred up a hornet's nest in the city, with principals complaining that they cannot buy teaching materials as their schools are still owed last year's fees.

Strelitzia had a R92 000 debt with the municipality for electricity and water supplied. The telephone line had been disconnected due to unpaid bills.

The lack of duplicating paper had a devastating impact on teaching and learning. Just one box of duplicating paper was allocated per grade per term. For the whole of the previous year teaching and learning went on without photocopied or printed materials. One of the teachers described the impact on the curriculum:

Our library does not have any books – they have to go to the main library – there were no papers the whole of last year – now we have a box for each grade which is very bad – one box for each grade and this supposed to last for the whole term and there is one box for each grade for the second term – how can we work like this? – because these kids they need these papers – it is either you have the books or you have the duplicated papers – at least if you have something – you got from the library or something you can make copies for them – now there is no paper and there are no books – the work is very bad –

To resolve the duplicating paper crisis, the school decided that each student should contribute a ream of paper and that students who did not comply would not get any

worksheets. Pupils had the bare essentials in terms of writing materials. Some did not have exercise books because they could not afford to buy them. Learning programmes were not evident.

The school had a computer room with computers donated to the school by Telkom. Grade 9 students were not offered computer education at all. Teachers had access to Internet and e-mail when the school's telephone lines were functional.

The school could not afford to pay for cleaning services. This impacted on the appearance of the school and on instruction time. Students cleaned their classrooms themselves during instructional time. The lesson after the lunch break every Friday was used for this purpose. The school had an untidy, neglected appearance. The ceilings were full of cobwebs and the walls were marked with graffiti and dirt stains. Litter in the corridors and on stairs were a common sight. The gardens were not tended and maintained. Bare ground had replaced lawn in many areas or else the lawn was overgrown where there was grass.

Immediately on entrance to the school, a stack of broken desks and chairs piled just inside the gate was noted. There was a large amount of rubble in each classroom – empty cool drink containers, paint tins, old papers, buckets, brooms, broken desks and chairs were commonly seen. The desk surfaces were dirty with graffiti carved into the wood. Broken windowpanes and latches were a common sight. In some classes the ventilation was so poor and discomfort levels were so high on hot days that not much learning was possible. Many classrooms become stuffy and unbearable. All classrooms had adequate lighting. The environment was far from appealing or attractive. Charts and posters were rare. Not all students had desks and chairs. The chalkboard did not erase cleanly because chalkboard erasers were a scarce commodity. Most teachers used paper or cloth to 'clean' the board.

The symbolic boundaries between school, home and community were very weak. On a Friday a festive mood prevailed. Official school time was used very differently from the

other two schools. Students and teachers were allowed to leave the school premises during the one-hour lunch break. Many teachers and almost all the students did. Some students did not return for the afternoon period. Teachers reported late for lessons and sometimes did not turn up at all. On Valentine's Day, there was a festive atmosphere in the school as well as in the community. Many adults were congregating on the streets. In school, pupils were clad in 'civvies' and were 'socialising' in groups for the duration of the school day. Many teachers were not in their classrooms and many students were rehearsing in the community hall for the celebration that was going to take place in the afternoon.

Three days later teaching times were once again disrupted. During assembly the pupils were informed that they would be accompanying the male teachers and would be going into the community to recover school property for two hours of the day. On asking, I was told that the community did not mind this intrusion as they often used school chairs for their functions and did not return them. Other teachers who did not accompany the students sat in the foyer and had discussions. The siren was sounded which signalled to pupils that they must come to school. Pupils began to return to school in groups. The principal and deputy principal stood at the gate and hurried pupils in. Pupils recovered two chairs and some school textbooks. The textbooks were very shabbily thrown into a pile in one corner of the foyer in full view of the teachers and principal.

According to one of the HODs the morning meeting had to be abandoned because teachers frequently came late. Teachers were often late for their lessons, sometimes did not show up at all, frequently left the class during lesson time, left earlier than the end of the period and accepted frequent interruptions of their lessons by other teachers and students.

Management of time in the classroom was idiosyncratic and poor in most of the classes. Classes took about 10 minutes to settle down, the lessons started late and often ran into the next lesson. The next teacher accepted this. No thought was given to time management in class by the teacher for group work, application, report back, making

notes. Often students were subjected to continuous teacher-talk for the whole lesson, or long periods of group work where personal knowledge was shared amongst students without any support materials, or writing copious and abstract notes from the board for the whole period, or left to their own devices while the teacher engaged in attending to individuals or groups.

Weak external framing existed between school and outside agencies. The school was very responsive to outside pressures. On the 13th of February a pamphlet from the Pietermaritzburg North branch of the ANC was circulated in the school advertising a meeting entitled 'Stop the War'. Teachers were very enthusiastic about the meeting. Many NGOs were active in the school. Youth For Christ (YFC) had a full-time worker in the school specifically tackling HIV/AIDS education. School Trade, an organisation that facilitates distribution of surplus resources from schools with surplus to schools with need, assists the school in procuring resources. ABSA was assisting with the school's entrepreneurship programme. School Finance, another NGO, was also assisting the school.

Corporal punishment was used openly and lavishly. The deputy principal who waited at the gate with a cane punished students for coming late to school by giving them a few strokes on their hands. Using the cane was a common practice in the school. Many teachers walked around with a cane during the day and had one in their classrooms. Students who did not do their homework were given cuts on their hands with a cane. Unusual techniques were used to punish students in class. In the LO class students were punished by the teacher by making students sit under their desks for the whole period. Because students were talking they were kept in that position for the next lesson as well and a note was sent to the AC teacher about it. Students submitted to this humiliating experience meekly. Pupils missed two lessons in which they not only did not learn anything but were subjected to a negative experience. Students were caned for not completing homework that often entailed demanding activities requiring reference books or LSMs. The school did not have a policy that guided teachers with regards to discipline and control, and teachers seemed oblivious of the new national policies in this regard.

Teachers who did not plan enough work for pupils got very offended if pupils did other subject work. A teacher who showed up fifteen minutes late aggressively asked the class what subject they were doing but backed down when one of the brighter pupils said 'general revision'. It was pitiful to watch students being treated so badly.

Spaces were not used for specialised purposes they were designed for. Because specialist rooms were being used as classrooms, most of the classrooms were large and spacious. For example the biology laboratory was used as a mathematics classroom and HSS was taught in a cookery room.

The administration block had a number of offices that were being used for storage purposes. The principal's office had a neglected appearance and was stark with bare essentials. The deputy principal's office was also untidy and hardly ever used by her. Offices in the administration block were untidy and used for storage purposes. One of the HODs offices was being used as a stock room for old carpets and other discarded material. The staff room was not used as a space for teachers – it had a few lockers and pigeon holes for teachers' mail but had no tables or chairs. It was bare.

During the break the teachers sat in the entrance foyer, had lunch and had animated discussions and laughed loudly. The principal and deputy principal also joined the staff there. The relations between management and teaching staff were horizontal when it came to non-educational matters and non-existent when it came to educational matters. The positional hierarchical relations were covert.

Table 8.1 Strelitzia Teacher Profile

Criteria	Teacher 1	Teacher 2	Teacher 3	Teacher 4	Teacher 5	Teacher 6	Teacher 7	Teacher 8
Age	40 - 49	25 - 29	25 - 29	30 - 35	30 - 39	40 - 49	25 - 29	30 - 39
Gender	M	M	M	M	M	M	F	M
L1	Zulu	Zulu	Zulu	Zulu	English	Zulu	Zulu	Zulu
Status	Full-Time	Full-Time	Voluntary	Full-time	Full-time	Full-time	Full-time	Full-time
Rank	L1	L 1	UTE	L 1	L2	Ass. Teacher	L1	L1
Experience in years	16	8	3	10	11	20	8	11
Qualifications	BSc., HDE, B.Ed. M.Ed.	STD Secondary Teachers Diploma	Travel and Tourism Diploma	SPTD Senior Primary Teachers Diploma	B.Sc. HED	M+2 JSTC Junior Secondary Teachers Certificate	SSTD Senior Secondary Teachers Diploma	Med. Educational Management
Major subjects	Phys. Sc. Maths	Maths Science	Travel & Tourism	Accounting Bus. Eco.	Mathematics Phys. Sc.	IsiZulu, PT, Science	English History	History, Zulu
Favourite subjects at school	Physical Science, Mathematics	Maths, Science	History, Biology	Accounting, Business Economics	Maths, Science	Zulu, History	English, History	History Languages
Schools attended	Ex-DET	Ex-DET	Ex-DET	Ex-DET	Ex-HOD	Ex-DET	Ex-DET	Ex-DET
Institution	University of Fort Hare	Indumiso College	Indumiso College	Indumiso College	UNP	Eshowe College	University of Transkei	UNP
Teaching subjects	NS	Technology	HSS	EMS	MLMMS	AC	LO	LLC

8.1.2 Teacher Profile

The biographical details of teachers shown in Table 8.1 indicate the greater homogeneity amongst the teachers. Seven were Black and one was Indian. Seven were male and one was female. Seven teachers had Zulu as their first language and one had English as first language. Seven of the eight teachers were full-time and on the permanent staff and one of the teachers was an ‘unprotected temporary educator’. Teachers had an average of three years of tertiary education and eleven years of teaching experience.

Most of the teachers at Strelitzia indicated that they would be able to teach any LA. One teacher indicated that previously he would not have been able to change to another subject, but now that we have LAs he could teach any LA. Another indicated that he would be able to change to another LA because ‘he was multi-skilled’.

The table shows very close correlation between favourite subjects as school pupils, major subjects at tertiary level and teaching subjects at school for two teachers. The science and mathematics teachers indicated that Mathematics and Science were their favourite subjects at school; they majored in these subjects at tertiary level and were teaching Mathematics and Science in the school. For the remaining teachers there was greater disjuncture across favourite subjects, major subjects and the subject or LA they were teaching:

- Teacher 6 indicated Zulu and History as favourite subjects and studied IsiZulu, PT and Science at college but was teaching AC.
- Teacher 7 indicated English and History as favourite subjects, studied it at tertiary level but was teaching LO.
- Teacher 3 indicated History and Biology as favourite subjects, studied travel and tourism at college and was teaching HSS.
- Teacher 2 indicated mathematics and science as favourite subjects, studied mathematics and science at college and was teaching technology.

Three teachers were graduates and highly qualified. The science teacher had a BSc. degree and majored in mathematics and physical science. Thereafter he completed a B.Ed and an M.Ed degree at the University of Natal. The mathematics teacher had a BSc degree and had majored in mathematics and physical science. The LLC teacher had an M.Ed in Educational management. Four teachers in the sample had teaching diplomas and one a teaching certificate. The HSS teacher had recently completed a diploma in Travel and Tourism. He held no tertiary qualification in either History or Geography. The LO teacher had a Senior Secondary Teachers Diploma. She majored in English and History and had no qualification to teach LO. The technology teacher had a Secondary Teachers Diploma to teach maths and science. He had no qualification to teach technology. The EMS teacher had a Senior Primary Teachers Diploma to teach commercial subjects. The AC teacher who had been teaching for twenty years had a two-year Junior Secondary Teachers' certificate and he was qualified to teach IsiZulu and History. He had no formal education in any of the four disciplines that comprised the AC LA.

8.2 Section B Formal-Discursive Analysis

The uncanny fit between Bernstein's integrated and collection codes and the twin-stream curriculum at the elite school has been shown in Chapter 7. Teachers had strong subject identities developed through stable and strong socialisation into subjects as school and university students and then as teachers in insulated subject departments and in teaching their specialist subjects. The characteristics of this elite school were very similar to stable conditions in European education that Bernstein's theory is based on. Both the integrated and collection code theorise the organisational and curricula practices and identities of modern or even post-modern educational institutions. It also made sense to study social, intellectual and procedural boundaries when they served the purpose of intellectual enhancement of students.

Analysing this ex-DET schools organisational and curricular practices that showed a mixture of pre-modern and modern characteristics, using Bernstein's concepts, obscured rather than illuminated the practices. The use of time and space were ad-hoc and while power and control relations were very hierarchical, not much empowering

knowledge was distributed. The boundaries did not serve the purpose of the intellectual enhancement of students in the majority of instances. The current practices can be accounted for by historical and structural factors like Bantu Education and current distributive decisions made by the democratic government that fail to intervene and address, but may actually exacerbate the poor teaching and learning situation that existed.

Whereas, the 'struggle' for a just South Africa bypassed the White school community, Black schools such as Strelitzia were major sites of political and educational struggle. Dislocation, strife, boycotts, life-threatening violence, disruption of 'education' were common features of Black schools during the struggle against Apartheid. Blacks were subjected to Bantu education, a system of education for Blacks that deliberately obfuscated intellectual enhancement, served the ends of social control, created the structural conditions for stratification of race groups economically and racially, was designed to consign Africans to a tribal society in the reserves and to meet the demands for unskilled labour.

Enslin (1984) pointed out that the majority of teachers in South Africa, and the vast majority of Black teachers continue to be 'products of Fundamental Pedagogics'. The majority of the teachers at this school continued to be 'products' of Bantu education either as school or college students as well as teachers in ex-DET schools. This political and educational history prevented teachers from experiencing a good quality education and from developing a subject identity. Many did not have well grounded or accurate subject knowledge, did not reflect subject loyalty and did not have strong subject identities. Teachers did not teach and judge students' acquisition of knowledge in terms of specialised subject or learning area knowledge.

Although the school had good basic infrastructure, the use of the buildings and the organisational characteristics of the school could be described as 'pre-modern'. Although post-modernism implies a rejection of purism and the certainty of modernism, in favour of a disintegration of boundaries, affirmation of popular and mainstream cultural knowledge; and pluralism; the predominantly weak discursive boundaries, and the lack of firm accurate knowledge taught at Strelitzia are interpreted as characteristic of pre-modernity.

In the first section of this chapter the socio-economic-historical analysis of the school was followed by a description of the current situation in the school in terms of the lack of basic material resources, the high failure rate in the Matric-examination, and the depletion of instruction time by non-curricular matters. While some aspects were under rational and deliberate control, a lot just happened by default, for example, the weak classification in the use of space and specialist buildings in the school, the random use of time and the frequent disruption of instruction by a host of contingent factors.

In this section the focus is on the ‘distribution of knowledge’ resources by the school. The structure of curriculum, knowledge, pedagogy and assessment that operated at Strelitzia is analysed. The qualitative form of analysis used is based on counting the frequency of occurrences. I felt uncomfortable in just presenting an inference numerically (for example seven of the eight teachers had reservations about teaching LAs and not subjects) and felt compelled to give the reader an indication of what teachers said or did that led to the inference – thus teachers’ responses from interviews, verbatim transcriptions of ‘pedagogic communication’ in the classroom and observations of classroom practices are quoted substantially. They enable a space for teacher ‘voices’ thus allowing the reader some vicarious experience of the situation. ‘Thick descriptions’ are supplemented by poignant responses of participants. But, unlike research that depends wholly on just ‘voices’ that Bernstein (1996), Moore and Muller (2002) are rightly sceptical of, teachers’ voices in this project were validated by observations of teachers’ practices.

8.2.1 Curriculum Structure

The Grade 9 curriculum structure was simple and rigid. Table 8.2 summarises the main components of the curriculum structure.

Table 8.2 Summary Of Curriculum Structure

Concept	Curriculum
Curriculum content	8 Learning Areas
Status	MLMMS, NS and EMS given higher status, but greater parity across remaining LAs
Timetabling	Rigid
Regulated by	OBE co-ordinator
Pupil grouping	Homogeneous ability groups
Pupil choice	None
Classification of space	Strong
Pupil control	Positional, public corporal punishment
Social relations amongst teachers	Independent and hierarchical

From a Bernsteinian perspective one could superficially argue that the structure of the curriculum on the surface illustrated elements of both the integrated and collection code. In terms of organisation of knowledge, Strelitzia timetabled eight integrated LAs. The explanation given by the HOD who decided on curricular matters was simply that policy required LAs rather than subjects. In line with the principle of the integrated code ‘things must be brought together’ subjects were ‘brought together’ but, ‘things were being kept apart’ also. For example, students were tracked and taught in separate ability groups and teachers of different subjects did not collaborate nor consult with each other.

The defining attribute of the integrated code is its less rigid social structure that arises from both the structuring of knowledge and the organisation of social relationships. The weaker classification amongst subjects facilitates more symmetrical power relations and greater collaboration amongst teachers of different subjects. At Strelitzia, the ‘less rigid social structure’ did not follow from the new organisation of knowledge into LAs. Very hierarchical, asymmetrical and positional power relations were the norm. The curriculum was autocratically imposed on teachers and students. Students had no choice at all as all eight LAs were compulsory. Rigid timetabling also set out the time and place for each LA. There was no intention to enable students to exercise power over what they learned, where, when and with whom. The strong

classificatory structures clearly imposed a simple but rigid social structure. Students and teachers were powerless to negotiate these structures.

Table 8.3 Learning Areas And Time Allocations

C2005		Planned Curriculum	
Eight integrated LAs	Time %	8 integrated LAs	Time %
LLC	20	LLC - Eng. Zulu	10 10
MLMMS	13	MLMMS	15
NS	12	NS	12.5
HSS	10	HSS	10
LO	10	LO	10
A&C	10	A&C	10
EMS	10	EMS	12.5
Technology	10	Technology	10
Flexitime	5		

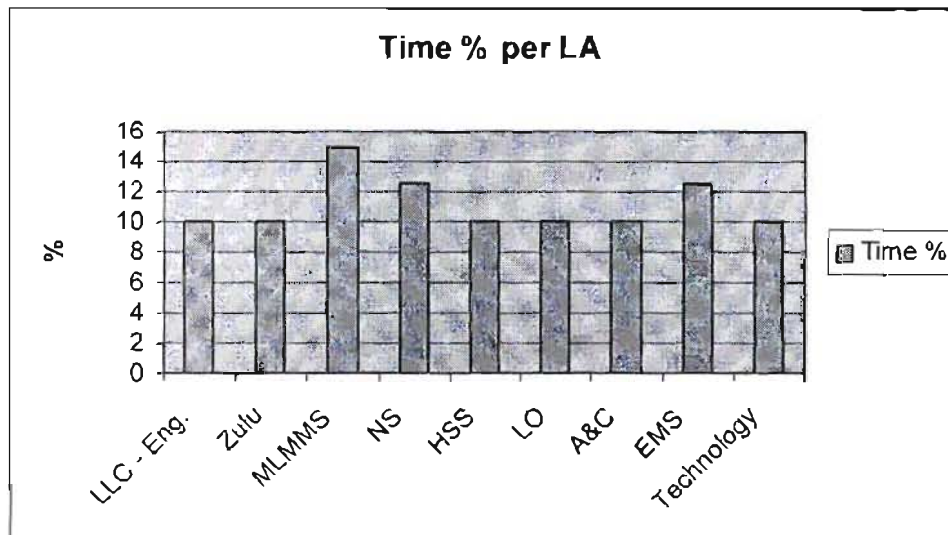


Figure 8.1 Time Allocations Per LA

As Figure 8.1 shows, the school did not offer any non-official subjects or areas of learning, any interdisciplinary projects, or special educational projects. The variance and standard deviation of policy and the schools time allocations were very close. For policy the variance was 1,1 and the standard deviation was 1,06. The standard deviation at Strelitzia was 1,7 and the variance was 2,9. This means that the time allocated to the LAs was closely aligned to policy and the status of subjects in terms of time allocations were less disparate from each other. The 5% flexitime was

allocated to MLMMS (2%), NS (0,5%) and EMS (2,5%). The flatter ‘curves’ on the graph indicate that sharp or great differences between core and peripheral subjects have been eliminated. Both the curriculum content and the allocation of time were symptomatic of a technical implementation of policy.

Table 8.4 Variance And Standard Deviation

8 LAs	Time %	Diff. from Mean	D
LLC - Eng.	10	-1.1	1.21
Zulu	10	-1.1	1.21
MLMMS	15	3.9	15.2
NS	12.5	1.4	1.96
HSS	10	-1.1	1.21
LO	10	-1.1	1.21
A&C	10	-1.1	1.21
EMS	12.5	1.4	1.96
Technology	10	-1.1	1.21
	100		26.38
Mean	11.1		
Variance			2.9
Standard deviation			1.7

Classroom observations showed that the subjects actually taught differed from those in the timetable. English, Zulu, Mathematics, Science, HSS, LO, Culture, Business Economics and Technology were taught. Subjects and areas of study such as Art, Speech & Drama, Music, Accounting, Home Economics, computer literacy, physical education, media or library education, religious education, Biology were not taught at all.

The lax organisational structures described earlier characterised organisational structures underpinning the curriculum. The school management delegated curriculum matters to a level one teacher who was appointed as ‘OBE HOD’ to oversee and co-ordinate the implementation of OBE in the school. The principal, deputy principal and the school’s management team did not participate in curriculum matters. An OBE committee comprising of Grade 9 teachers had been established to oversee the Grade 9 curriculum. The Grade 9 teachers and co-ordinator met and decided on environment as the phase organiser and that individual teachers could

Table 8.5 Conceptual Analysis Of The Curriculum

Criteria		HSS	NS	MLMMS	LLC	AC	EMS	LO	TECH
1. What knowledge taught?		Fragmented bits of History and Geography	Specialised	Specialised	Specialised, utilitarian & everyday	Utilitarian & everyday	Specialised, utilitarian & everyday	Utilitarian & everyday	Specialised, utilitarian & everyday
2. Classification	Inter-discursive boundaries between subjects	Power C - Knowledge C -	Power C+ Knowledge C++	Power C+ Knowledge C++	Power C+ Knowledge C -	Power C+ Knowledge C -	Power C+ Knowledge C -	Power C+ Knowledge C -	Power C+ Knowledge C+
	Inter-discursive boundaries between LAs.	C++	C++	C++	C++	C++	C++	C++	C++
	Intra-discursive	C -	C++	C++	C -	C -	C -	C -	C+
3. Framing of ID	Who controls?	F++	F++	F++	F++	F++	F++	F++	F++
4. Framing of ID (specialised subject knowledge)	Selection	F--	F++	F++	F--	F--	F -	F -	F -
	Sequencing	F--	F++	F++	F--	F--	F -	F -	F -
	Pacing	F--	F++	F++	F--	F--	F -	F -	F -
	Evaluation	F--	F++	F++	F--	F--	F -	F -	F -
5. Framing bet. specialist and everyday knowledge		F+ +	F+ +	F+ +	F- -	F- -	F- -	F- -	F- -
6. Framing of RD		F+	F+	F+	F+ +	F+ +	F+ +	F+ +	F+
7. Pedagogy	Visibility	Ranged from visible to invisible	Visible	Visible	Ranged from visible to invisible	Ranged from visible to invisible	Ranged from visible to invisible	Ranged from visible to invisible	Ranged from visible to invisible
	Epistemic operations	Vague & inaccurate	Explicit	Explicit	Vague & inaccurate	Vague	Vague	Vague	Explicit
	Recognition rules	Implicit	Explicit	Explicit	Implicit	Implicit	Implicit	Implicit	Explicit
8. Instruction	Whole class	20%	70%	70%	50%	70%	10%	10%	60%
	Small group	80%	20%	20%	40%	10%	80%	80%	30%
	Individual	0%	10%	10%	10%	20%	10%	10%	10%
9. Assessment	C/SA*	Not apparent	C	C	Not apparent	Not apparent	Not apparent	SA Vague, implicit criteria	Vague, implicit criteria
	S/MM*		S	S					
	I/Grp.*		I	I					

*C - Cognitive/socio-affective *S/MM - Single or multiple mode *I/Grp. - individual/group

Refer: Table 8.5: Conceptual analysis of the curriculum:

The use of the concept classification was problematic – In MLMMS and NS the teachers powerfully and consistently transmitted powerful specialised subject knowledge. In LLC, EMS, LO, AC the teachers' power was related to physical presence and not to power of specialised discourses – teachers powerfully transmitted unspecialised, low-status and powerless knowledge. I therefore separated power from knowledge. In HSS the teacher lacked both. In technology the teacher had close personal relations (C -) and taught both specialised and everyday, community knowledge and was coded as C+ and not C+ + as in MLMMS and NS where specialised knowledge was consistently taught.

Table 8.6: Discursive Practices

Criteria	NS and MLMMS	LLC, AC, EMS, LO, HSS, Technology
Valid knowledge	Specialised knowledge and skills for 25% of instructional time	Dominance of utilitarian, everyday community knowledge, meaningless integrated knowledge for 75% of instructional time
Classification of knowledge	Strong insulation of specialised knowledge	Strong insulation of unspecialised knowledge
Framing of ID (Who framed?)	Strong framing by teacher of subject knowledge	Strong framing by teacher of weak conceptual knowledge
Framing of ID (specialised subject discourses)	Strong framing of subject knowledge	Very weak framing of subject knowledge
Framing of RD	Strong	Very strong
Framing between educational and everyday knowledge	Strong	Very weak
Pedagogy	Visible, systematic and deliberate exposition, mediation and explanation to facilitate cognitive and social construction of knowledge	Ranged from visible to invisible, negation of pedagogy, lack of systematic and deliberate exposition, mediation and explanation, withholding of pedagogic judgment that negated the cognitive construction of knowledge
Epistemic operations	Explicit	Implicit or non-existent
Epistemology	Traditional subject knowledge and procedures	Serious flaws, included inaccurate knowledge
Recognition rules	Explicit	Implicit, vague
Cognitive demand	Complex cognitive competences	Ranged from complex to simple competences
Assessment criteria and mode	Explicit, formal individual cognitive competences	Not apparent or vague, haphazard, whimsical, socio-affective competences for many
Control	Personal	Positional, corporal punishment
Teacher identity	Retrospective and prospective identities, purist ideology, old humanist and progressive educator social group	De-centred identities, utilitarian ideology, technological pragmatist and industrial trainer social group

8.2.2.1. What Knowledge Was Taught?

Table 8.4 shows that in six of the eight LAs everyday community knowledge, utilitarian knowledge and skills and meaningless integrated knowledge were dominantly mediated. It was only in MLMMS and NS that specialised academic subject knowledge and skills were consistently mediated. In the section that follows these claims are substantiated by vignettes of knowledge taught in the different LAs.

8.2.2.2 Specialised Subject Knowledge And Skills In MLMMS And NS

In both MLMMS and NS the lessons were mostly subject-centred and teachers mediated the distinctive interrelated concepts, epistemic operations, language and skills of the subjects. The excerpt below from a NS lesson indicates the categorical notions of compound and element and the specialised and complex linguistic structures of the subject being mediated.

- T: Last year we did 20 elements – who can give us the first five elements – the symbols for the elements?
L: CO₂.
T: Is that right? Is it an element?
L: Supposed to be carbon – C.
T: What is wrong with CO₂? Why is it not an element?
L: It's a gas.
T: It's not an element but a compound. Can you give another example?
L: Lithium and symbol is Li.
T: One more.
L: Helium – He.
T: Can you give examples of compounds?
L: H₂O.
L: CaCO₃.

As in the above lesson where domain specific notions (Hegel, 1969) were being predicated, in other lessons observed the teacher systematically and deliberately taught the core concepts and hierarchical structure of the subject. There was an emphasis on conceptual understanding and vertical progression.

In the first maths lesson the number system, that was the first section in the old mathematics syllabus for Grade 9, was taught. Natural numbers, counting numbers, integers and rational numbers were taught. In the next lesson the teacher taught changing common fractions to decimal fractions and changing decimal fractions to common fractions and recurring decimals. There was an emphasis on basic mathematical skills and concepts. Students were told to compile a notebook with a record of the 'tables' and a glossary. In the next lesson domain specific definitions of terminating, non-terminating or recurring decimals, and of rational numbers were given, for example, rational numbers were defined as 'any number that can be written in the form a/b where a and b are integers'. Students were set the following task:

Work in pairs – write down whether the following statements are true or false:

- a. All natural numbers are whole numbers.
- b. All integers are natural numbers.
- c. All whole numbers are integers.
- d. All integers are whole numbers.
- e. All natural numbers can be written as improper fractions.
- f. All improper fractions can be written as whole numbers.
- g. All whole numbers are rational numbers.
- h. All natural numbers are rational numbers.
- i. All rational numbers are integers.
- j. All integers are rational numbers.

Both teachers taught the stock of knowledge in each discipline. Neither went beyond conceptual understanding to the application of theoretical knowledge to real world or contextualised problems. In both maths and science complex cognitive competences were being enabled.

8.2.2.3 An Incoherent Mix Of Knowledge In HSS

In a lesson very complex, abstract concepts relating to practical and moral judgments such as racism, democracy, sexism, and human rights were touched on together with very simple questions such as 'give three things that can be recycled' and 'give three types of pollution and one example of each' and a new unrelated question 'what is the difference

between urban and rural areas?’ Each aspect was trivialised. The meaning making process involving active cognitive construction of knowledge was negated.

Define the following terms:

- 1.1. Racism
- 1.2. Democracy
- 1.3. Sexism
- 1.4. Pollution
2. Give examples of basic human rights.
3. Give three things that are recycled.
4. Give three types of pollution and one example of each.
5. What is the difference between urban and rural areas?

Fragmented bits of knowledge from different sections in history and geography were taught. The lack of sensible sequencing of concepts to enable meaning making was bewildering to students. Where just History was being taught, complex questions requiring deliberation and debate such as Questions 1 and 4 below were superficially taught without any resources from which students could get information.

1. Are all democracies alike? Explain.
2. Do we have a written constitution in South Africa? Explain.
3. Do we have regular elections in South Africa?
4. Discuss whether you think the 1994 elections were free and fair?

8.2.2.4 Utilitarian Knowledge And Skills

Utilitarian knowledge and skills were dominantly taught in LLC, AC, EMS, Technology and LO. All the EMS lessons were geared towards entrepreneurship education. Students were being taught the details of how to open and run a small business. For example, in lesson five, students were told to copy the following notes from the chalkboard into their books and do the activity set.

Working out production costs

If the goal of a business is to make money, it is important to know how to calculate the costs to produce a product and how many products you need to sell in order to cover the costs and make a profit.

Fixed cost – these are the costs you have to pay to run a business no matter how many products you produce. For example, the monthly fixed costs of a production business could include the rent for the factory, the interest charged on money borrowed, salaries and depreciation.

Variable costs – these are costs that change depending on how many products you produce – so if you produce more goods your variable costs will be higher. The cost of the material used to make the product and the wages of the workers who are directly involved to make the product, would be counted as variable costs.

Break-even analysis.

It is when total costs are equal to total income. This calculation will give you the number of articles that must be made and sold in order to cover your costs.

Activity.

Product : mugs with designs printed on them.

Rent per month – R10-00

Interest on loan per month – R2-00

Costs of mugs – R6-00

Paint per mug – R0-40

Packaging 4 cents per mug.

Sales commission – R1-00 per mug

From the information given above calculate the following –

- a. fixed costs
- b. variable costs
- c. total cost of one mug

In LO the topic was career guidance and students were being told to be ‘realistic’ and choose careers that they could manage and not to ‘dream about becoming doctors and engineers’. In technology everyday knowledge dominated conceptual knowledge. In the second LLC lesson the topic was ‘qualities of a good learner’ in which the teacher listed 14 random qualities: ‘participating, punctual, neat school uniform, up to date with school work, respectful, neat, clean and tidy, etc.’

8.2.2.5 Everyday Knowledge

The AC teacher laboriously explained simple everyday knowledge at a very slow pace to students. In a whole one-hour lesson students wrote six short questions and six short answers:

1. What is story telling?
2. Traditionally what time was suitable for telling folklore?
3. Whose responsibility was it to tell stories?
4. Which place in the homestead was approved for telling stories?
5. What is good, the use of stories (benefit)?
6. African culture, stories, history, etc. were passed over to generations through _____?

The teacher consolidated and organized the existing common-sense knowledge of learners. Then over two lessons the teacher explained ‘good tips in storytelling’. The transcript of the AC lesson shows the dominance of contextualised, local knowledge based in the experiential life-world of the students, aimed at practical mastery and at moral education.

T: Let us begin with the question – how? Good tips in story telling.

L: Must talk with feeling.

T: Yes, we must use gestures, body language like hands, you have to use facial expression – use face muscles to show expression. Dramatize what you are saying - must also use a loud voice because spectators get annoyed with soft voice. Be confident – if people see that you are not confident then they do not listen to you. Don’t show fear. Have the correct body posture (demonstrates how they should not stand). Tempo – speed – try not to be too fast. What are the reasons behind storytelling? Why?

L: To tell the kid about culture and history.

T: To educate (switches to Zulu) folklore (ingane kwane) was meant to educate young one – right and wrong – moral lessons – our forefathers told story that had a moral lesson, there are moral lessons in good stories. Who can give me an example of a folklore with a moral lesson? (Tells a story about an old lady whom a boy helps.) The moral lesson is ‘help other people so God can bless you’. (Tells the story about the boy who cried wolf and tells the class) ‘practical jokes are not healthy’. Why else? To entertain, to make people happy, to make people laugh.

Although the lesson was presented very powerfully and was entertaining, the excerpt illustrates the very simple, cognitive competences being taught to these unsuspecting students. Also, although very simple, short sentences were being used there were many instances of incorrect language use. The emphasis on oral communication rather than written communication was the norm.

8.2.2.6 Community Based Knowledge

The LO teacher organised all her lessons around careers and the subjects required to pursue them. She told students to be realistic about their career choices: ‘you know you don’t know maths and science therefore you can’t become a doctor’. The low socio-economic background of the community, the lack of good role models accompanied by many bad role models and practices, had a direct impact on LO lessons. As the LO teacher explained:

M: ...in this community they lack role models – there are no role models – after school most of them run around carrying babies, going to the clinics, most of the boys they become conductors in kombis or criminals in the community.

The lack of textbooks and LSMs in LO was ‘solved’ by asking students to find professionals within the community from whom they could learn about the particular profession. As the LO teacher explained:

M: ...there are no books for career guidance as you have seen –I expected learners to check their careers – they then go to certain people – if you want to be a nurse you go to a nurse – you interview a nurse and she will tell you everything about nursing - maybe once in a week then she goes into the clinic and check what is happening there so the person can really come up with whether she really wants to be a nurse.

Many students did not complete this task because there were not many professional people within the community, the majority are unemployed and the few who work are unskilled workers. The harsh ‘punishment’ for not doing the task has been described earlier in the chapter. The LO teacher described the quandary students find themselves in

terms of the lack of resources at home and few professional role-models in the community:

M: ...it is good for the pupils who are not lazy and then those who are lazy we don't have any work for them because they will say I didn't find anybody I can interview or maybe I forgot, or I didn't get the book, I didn't get the magazine, sometimes the learner is not really lazy, just there is no one in the community who is what she wants to be...

8.2.2.7 Inaccurate Knowledge

There were many instances of inaccurate knowledge being taught. The LLC teacher defined homonyms or homophones as 'words that sound the same but is spelt differently and has different meanings' Punctuation errors, spelling errors and incorrect parts of speech were common. The list compiled on the board by the LLC teacher illustrates this point:

What are the qualities of a good learner?

1. participating
2. punctual
3. neat school uniform
4. up to date with school work
5. respectful
6. attention
7. neat, clean and tidy
8. concentrate
9. doesn't bully others, doesn't swear others
10. doesn't steal
11. pay school fees
12. mustn't write on walls
13. always at school

The HSS teacher missed the main point of his lesson. He attempted to teach that with an independent judiciary in South Africa, even government officials are liable for prosecution by writing the following on the board:

The following article is an example of democracy in practice:

Although a minister served in the cabinet as minister of public works, he was dealt with as an ordinary citizen. Mr Radebe was born in Cator Manor, Durban in February 1953. After Matric he studied law at the university of Zululand. During the 1976 uprising, he joined the ANC and fled the country. In the years abroad he completed a Masters degree in international law. Later he left for Lesotho from where he co-ordinated covert operations for the ANC in South Africa, but in 1986 he was arrested and found guilty of contravening the Act on terrorism. After his release in 1990 he devoted himself to promoting the ANC and served on various council. After the 1994 election minister Radebe was appointed as the minister of public works.

The points that would substantiate the topic and enable students to grasp the meaning intended had been left out.

8.2.2.8 Discursive Relations

The difficulty in analysing the power and discursive relations using the concept of classification is explained initially. In the theory the concept of classification at once indicates both knowledge and power relations. It was only in MLMMS and NS that the strong boundary maintained served the purpose of teaching specialized knowledge, therefore coded C+ + for both power and knowledge. For seven of the eight teachers, classification as it refers to boundary maintenance or power relations was strong. It was only the HSS teacher who showed very weak power relations and is therefore coded as C- for power relations. For four of the seven teachers (LLC, AC, EMS, LO see Table 8.5) coded as C+ (for power relations) the strong boundary maintained did not translate to strong classification of specialized knowledge. Take, for example, the AC teacher who maintained strong boundaries or strong power relations – this is categorised as C+ in Table 8.5. This was very different from the C+ + in the elite school where the boundary was maintained to facilitate access to specialized discourses – their language, concepts, procedures, values and attitudes. At Strelitzia these teachers powerfully taught everyday knowledge – the social boundary set served no intellectual purpose – it did not facilitate intellectual enhancement of students' cognitive abilities. Table 8.5 therefore shows these aspects of classification, of power and knowledge separately. With the exception of the HSS teacher, the power of other teachers was clearly visible and was therefore coded C+.

In terms of the classification of specialized discourses five of the eight teachers were coded as C- because specialized discourses were not being strongly classified. In the technology LA both specialized and everyday knowledge were taught and it was therefore coded C+ for discursive relations.

The above can be summed up into the following:

- With the exception of the HSS teacher who seemed to have no relations with the students, seven of the eight teachers demonstrated strong power relations. These teachers visibly controlled the students.
- It was just in the case of two teachers, the mathematics and NS teachers, that the strong boundaries consistently served the purpose of strong classification of specialized subject knowledge.
- The technology teacher showed strong discursive classification, but weaker than mathematics and NS as more everyday knowledge was taught with specialized knowledge.
- Five teachers (the HSS, AC, LO, LLC and EMS) demonstrated weak discursive classification of specialized subject knowledge and taught everyday knowledge, a hotchpotch of knowledge or knowledge for direct utilitarian purposes.

Although LAs were timetabled, integrated subject knowledge was not being taught in any LA. In MLMMS pure mathematics was taught and in NS pure science was taught. The school blurred the boundary between subjects but these teachers were maintained impermeable boundaries between their and other subjects. The topic taught in each LA indicates each LA 'going its own way' where a specific subject area was being taught. Inter-discursive relations across LAs were not evident either, therefore coded as C + +. The table below sets out the section taught in each LA.

Table 8.7: Topics in each LA

LA	Topic
MLMMS	Rational and irrational numbers
NS	Elements and compounds
HSS	Democracy, pollution, rural and urban areas
EMS	Productivity
A&C	Story telling
Technology	Structures
LLC	Homonyms, qualities of good learner
LO	Career guidance

The programme organizer ‘environment’ decided on collaboratively remained a non-starter and all LAs were strongly insulated from each other.

8.2.3 Pedagogy

8.2.3.1 How Was Knowledge Taught?

The pedagogy varied across the LAs from visible, systematic and deliberate exposition, mediation and explanation of subject concepts to invisible, incoherent, and unsystematic pedagogy. The negation of pedagogy arising mainly from the negation of pedagogic judgment (Davis, 2003) served to negate knowledge also.

The MLMMS and NS teachers used progressive pedagogic strategies to facilitate both the cognitive and social construction of knowledge. As discussed in the previous section, both taught the structure, knowledge and language of their subjects but used progressive strategies. These teachers explained, mediated and scaffolded students’ induction into the subjects.

After explaining what compounds and elements were the NS teacher went on to demonstrate models of compounds using balls that fit into each other. The teacher then set a group task: each group chose a compound, made a model of it and then explained it to the class. Radical visible pedagogy (Bernstein, 1990) enabled students to understand abstract concepts and to use the specialist language to describe their constructions of

compounds. The epistemic operations and language of science were being made explicit and students were successfully 'recognising and realising' them. The report-back by each group took the form of show-and-tell. Amongst the five groups many compounds CO_2 , NH_3 , CH_4 , CO , NaCl , CaCO_3 and HCl were constructed, showed to the class and explained. Learners were able to complete this task successfully and were being systematically inducted into specialised science discourse.

In **MLMMS** the essence of mathematics – a set of logically connected concepts and procedures was taught by the teacher using deductive and inductive logic. For, example, after explaining to the class what rational numbers are – 'a number that can be written as a/b where a and b are integers and b is not equal to zero is a rational number' the teacher set an activity where learners were required to classify numbers as natural, counting and integers in a table and to discover from this that natural numbers, counting numbers and integers are all rational numbers. After teaching changing decimal fractions to common fractions the teacher set examples where learners discovered the concept of recurring decimals.

The common strategy used by the mathematics teacher entailed: explanation of a concept or procedure, application of learnt procedure by students and then checking of students' constructions to the correct answer. These points are elaborated on by drawing on lesson 4.

The teacher began the lesson on a strongly classified and framed basis 'we are going to change common fractions to decimal fractions.' He did several examples on the board interactively taking pupils through all the steps. Pupils were actively participating by volunteering answers or by listening. By systematic question and answer the teacher made the epistemic criteria explicit – learners were able to check their own meanings as the lesson progressed. He then set the class an exercise that they had to complete in their groups:

Copy and complete the following:

- a. $\frac{1}{2} = X/10 = 0,5$
- b. $\frac{3}{4} = 75/X = 0,75$
- c. $\frac{1}{8} = X/1000 = 0,125$
- d. $\frac{1}{4} = X/X = X$

What are the above decimals called?

In the third stage the teacher reviewed the answers interactively with the pupils on the board. Students were able amongst themselves to give the correct answers – they had acquired the recognition and realisation rule.

- a. $\frac{1}{2} = X/10 = 0,5$
 $X = 5$
- b. $\frac{3}{4} = 75/X = 0,75$
 $X=100$
- c. $\frac{1}{8} = X/1000 = 0,125$
 $X = 125$
- d. $\frac{1}{4} = X/X = X$
 $25/100 = 0,25$

What are the above decimals called?

Terminating decimals.

In the next step the teacher moved away from the deductive stance to the inductive stance. By setting examples where the answers were a recurring decimal learners were guided to discover this type of decimal.

T: Copy and complete by replacing X with numbers

- a. $\frac{1}{3} = 0, _ _ _$
- b. $\frac{5}{6} = X$
- c. $\frac{4}{7} = X$
- d. $\frac{2}{9} = X$
- e. $\frac{2}{3} = X$

What are the above decimals called?

Define above type of decimal.

Define rational numbers.

While working out the examples one of the learners in the group that I joined had discovered the pattern and told the teacher that the same numbers are continuously being repeated. The teacher tells this pupil that this is a recurring decimal. The teacher then reviewed the answers interactively on the board.

As shown the MLMMS and NS teachers systematically and deliberately taught the complex concepts and linguistic structures of their subjects.

8.2.3.2 Negation Of Pedagogy

The pedagogic strategies of the LLC, EMS, LO and HSS teachers confounded the cognitive construction of knowledge for various reasons and is best described as a negation of pedagogy. Firstly, specialised knowledge was transmitted in the form of abstract unmediated notes that students copied from the board over many whole lessons. Take for example, in HSS, the following notes were written on the board by the teacher and copied by students without conceptual predication and linguistic elaboration:

A Democratic Dispensation

The word democracy is derived from a Greek word: Democratia – demos means people and Kratos means rule. We could sum it up as a form of government whereby representatives receive a mandate from voters to govern the country and to make laws. South Africa is an example of representative democracy whereby voters vote for a representative from various parties to represent them in parliament (HSS, lesson 4).

Secondly, students were set demanding tasks without any mediation, scaffolding or teaching at all. In EMS five or six learners in a group shared a handout. The teacher told the class to read page four and to do activity two, then read page five and do activity three. Many learners had individual queries because they were confused about the activities. The teacher explained to me that learners do not know the meanings of words – “like they don’t know what diamonds mean”. The recognition rule was left implicit and vague. A similar occurrence in lesson 4 where the topic was “working out production costs” – the teacher wrote definitions on the board for fixed cost, variable cost and break-even analysis. He then set an activity : “from the information given above calculate fixed costs, variable costs and total cost of one mug”.

Thirdly, teachers often withheld pedagogic judgment. Students' answers were often not adjudicated by the teacher as correct or incorrect, valid or invalid. Students' constructions were ignored or accepted without evaluative judgment by the teacher. Take, for example, in LLC the teacher tells the learners that the section is "homophones or homonyms". He read a definition that was on the board: "homophones – a word that sounds the same but is spelt differently and has different meanings. Homonyms: words that have more than one meaning". He then told the pupils to "come up with homophones in their groups". He also told them that it was important that "everybody in the group agrees". The group where I was seated followed instructions and came up with: bad – bed, bin – been, bag – beg, four – for, whole – hole, die – dye, write – right, heard – head, sun – son, hair – hare. Students' constructions were not reviewed by the teacher and students had no way of knowing whether they were accurate or not. In the next lesson this lesson was not reviewed.

Fourthly, abstract concepts were not predicated nor linguistically elaborated. A common practice was that teachers transmitted an abstract definition without predication or explanation. In response to the question 'Who is an entrepreneur?' the teacher provided the definition, 'an entrepreneur is an organizer of the factors of production'. Similarly in HSS the linguistic elaboration and the conceptual predication of complex notions (Hegel, 1969), such as racism and sexism, was not evident. The teacher simply perfunctorily transmitted a definition of each concept.

Fifthly, many teachers' accepted students' everyday descriptions as valid and adequate. The excerpt from a technology lesson illustrates this point.

T: What is technology?

T: (repeats the question)

L: Using cell phones is an example of technology.

T: Before we needed to write to communicate, now we have phone and fax machines

Sixthly, most of the lessons were strongly segmented. Teachers hardly ever reviewed previous lessons or linked lessons with each other. In other words, sequencing between

lessons was non-existent. Lesson topics were unrelated to each other. This resulted from strong intra-discursive classification or segmentation of topics that resulted in weak intra-discursive conceptual progression.

Finally, teachers were not mediating the recognition rule of each specialised discourse. The EMS teacher complained of students' inability to interpret pictures within the context of Business Economics:

they get pictures – a picture of a house – you have to supply factors of production – a picture of a man sitting on a desk – they can't say that that is a entrepreneur he will write that a man is sitting on a desk –some of them they don't look at what is expected they look at what they are seeing and they write what is there also remember in class in that activity there was the question on factors of production – there was a tree – so they should think about natural resources but the kids they can write this is a tree so we don't get what is exactly expected...

Students were not being socialised into the cognitive norms and values of specialised discourses. Their answers, as related by the EMS teacher, of 'a man sitting at a desk' instead of 'entrepreneur' and 'this is a tree' instead of 'natural resources' indicate students' stagnation in everyday, simple language. The very weakly classified context that the teacher used hindered students from acquiring the 'recognition rule' of a specialised discourse.

8.2.4 Control Relations

8.2.4.1 Framing Of The Instructional Discourse

The application of the concept framing to pedagogy was problematic. Because all teachers, and not students, selected, sequenced, paced and evaluated knowledge, the criteria 'who controls?' was coded as strong framing in Table 8.5 for all eight teachers. While the teacher strongly controlled what knowledge was acceptable or not in all LAs, the strong framing, however, did not translate to strong control of specialised subject knowledge in all LAs. The very strong framing (F ++) exercised by the MLMMS and

NS teachers translated into strong control over specialised subject knowledge, also coded F++, because the selection, sequencing, pacing and evaluation of knowledge in these LA served the purpose of mediating the structure of knowledge of these disciplines. In the other LAs the strong control exercised by the teacher steered and marshalled students into horizontal discourses or into a celebration of their own experiential world. Therefore this aspect of framing ‘what knowledge was framed?’ is coded as F- because the selection, sequencing, pacing and evaluation of knowledge was weakly framed with reference to specialised subject knowledge. The strong framing by these teachers did not enable intellectual enhancement of students in specialised discourses.

Only the NS and MLMMS teacher demonstrated strong framing of subject knowledge. The introductory statements of the teacher indicate the strongly framed context ‘last year we did twenty elements – who can tell us the first five elements and the symbols for the elements?’ orientates the pupils to what is expected, in the context of NS. The strong framing practices are also indicated by the questions: ‘What is wrong with CO₂? Why is it not an element?’ These deliberate prompts steer students to acquiring the recognition rules. Since none of the students know the teacher tells them ‘it is not an element but a compound’. He goes on and asks for another example and a pupil produces the legitimate answers ‘lithium and the symbol is Li’. The deliberate and systematic mediation by the teacher guided students towards speaking the legitimate text or possessing the realisation rule. Pupils were assisted by the pedagogic skills of the teacher to acquire the specialised language and knowledge of NS. The same situation prevailed in MLMMS.

In five LAs (see Table 8.4) the weaker framing in selection, sequencing, pacing and evaluation prevented students from defining the specialised subject context and the recognition and realisation rule of the subject. In technology the teacher did select and sequence knowledge defined as technology in the official technology LA statements but the dominance of everyday examples and language used in the classroom weakened the framing of specialised knowledge.

In all the LAs very slow pacing of knowledge was the norm. The slow pacing of knowledge due to the lack of photocopied LSMs was inevitable in all LAs and accounted for the slower pacing of knowledge in NS and MLMMS. The very slow pacing in other LAs arose out of other factors. The poor use of time, outside the classroom, has been described in detail earlier. In addition, teachers allocated much more time than necessary to group work, for students to copy notes, teachers planned to teach too little (the six short questions and answers in the AC lesson over an hour has been mentioned earlier), and used too much time for report-back by students.

The sequencing of concepts negated the vertical integration of meaning in six of the eight LAs. The lack of conceptual progression in the HSS lesson was pointed out earlier. Similarly in EMS unrelated complex concepts were introduced using complex terminology that students did not know. In LLC also the teacher did not introduce and explain the concept of homonyms to consolidate vertical integration of meaning such that students were left quite confused.

8.2.4.2 Framing Of Specialised From Everyday Knowledge

Generally the very weak framing relations, coded as F-- for LLC, AC, LO, Technology and EMS, between specialised and everyday knowledge hindered the mediation of specialised knowledge. Four different framing relations were observed.

Firstly, very strong framing of specialised knowledge from everyday knowledge was observed. The MLMMS teacher maintained very strong framing between mathematics and the real world. Across the six lessons observed there was only one minor, fleeting reference to common-sense knowledge where the teacher explained fractions by referring to cutting an apple into two and four pieces. Similarly the HSS teacher made no reference to the real life experiences of the learners at all. Many aspects of specialised discourse introduced like racism, sexism, pollution, recycling, urban and rural areas, democracy remained at the abstract level – the teacher did not relate each to learners' own experiences.

Secondly, everyday knowledge was recruited to facilitate cognitive access to specialised discourse in NS. The NS teacher made references to common-sense knowledge wherever possible to enable a meaningful understanding of science, for example the teacher explained to students that the scientific term sodium chloride means salt in everyday life. He also used the symbolic notation of water (H₂O) to explain what a compound is.

Thirdly, weak framing of specialised knowledge from everyday knowledge was observed, with a tendency for the everyday being given more time and validity. For example the technology teacher taught very basic everyday knowledge interspersed with a few subject concepts:

T: What we are going to do is take one structure and look at how it is made and then construct that structure. We are going to do a shoe. Discuss with your partner about a shoe under the following headings:

1. Is it man-made or natural?
2. Function
3. Need it satisfies
4. Different makes of shoes

T: Let's take a bridge for an example – it has the function of supporting a road – it helps people to move from one side to the other side of the river by car or by walking although one can do it by swimming also.

The learners' experience of knowledge in the technology class was very simplistic as shown by the discussion that ensued during the review of answers:

T: For number 1 – I hope none of you said natural? No. 2. function :

L1 : Protects feet.

T: From what?

L2: When the sun is hot.

L3: It protects the feet from the sun and dirt. It protects the feet from bottle pieces.

T: What needs are satisfied by the shoe?

L: People need to look good or nice.

T: Types of shoes?

L : (A variety of answers provided) – slippers, soccer boots, takkies, bedroom

slippers, sandals, lace-ups...

Almost the entire discussion was based on context-dependent talk. The amount of decontextualised talk around the concept structure was minimal.

Fourthly, non-specialised and everyday discourses exhausted the pedagogic encounter with little or cursory reference to specialised discourses as in AC and LO. The excerpt from the AC lesson below in which the teacher narrated 'the don'ts of storytelling' to students illustrates this point:

Don't scratch head or other parts of body.
Don't laugh before your audience.
You should control yourself.
Don't mix facts – don't contradict yourself – even in court.
Don't lose eye contact with audience.
Uses of story telling – TV, radio, teacher.

The most astounding practice observed was that teachers taught both horizontal discourses separately in different lessons without establishing the link nor the legitimate discourse as in LLC, EMS, HSS. Just common-sense knowledge was shared in some lessons with no development on it. In other lessons abstract specialised knowledge was transmitted without mediation or link to common sense knowledge or to the real-life experiences of pupils.

8.2.4.3 Framing Of The Regulative Discourse

The ethos of the school of visible and public punishment for 'misdemeanours' characterised the classroom also. Very hierarchical and undemocratic power relations characterised social relations between students and staff. Framing of the regulative discourse varied from very strong in EMS, AC, LLC, LO, to weaker framing in technology, NS, MLMMS and to loss of control in HSS. As in the school where corporal punishment was accepted as appropriate, in the classroom the EMS and LO teacher used the cane freely. Many visible mortifying techniques were used by teachers such as

pinching and insulting students, striking them with a cane, making them do humiliating acts, such as sitting on the floor, and under their desks were common.

In the EMS lesson students were threatened, humiliated and punished for not coming up with acceptable answers. Learners were given time to do the activity and were then asked to report back. The teacher tells the learners that if the group leader was not up to standard he would 'chase them away and give them zero'. The first group leader presented for about thirty seconds but made no reference to the activity itself. The third group leader went to the front but stalled – the teacher gave her a shot on her hand with a stick and asked her to sit down. He then tells them that if the group leader cannot control the group they will get zero.

P: I must say coming from an ex-HOD school the discipline here is better than in other schools and the teachers do inflict corporal punishment but I don't think that there is a need for corporal punishment – you find that teachers sometimes inflict corporal punishment where it is not warranted –

Undoubtedly, these practices were having a wounding effect on students. Unlike Rose's (2004) descriptions of South African secondary students in the new South Africa as 'politically aware' and 'highly motivated' these students accepted their lot meekly. They accepted harsh and abusive punishment meted out to them. The Mathematics HOD commented that 'learners here fail and they just accept it, you know, as one of the things that happens to them and many come and repeat the grade and carry on'. My sense was that since there were no clear criteria of what was expected of them in terms of cognitive competences, passing or failing was dependent on maintaining good relations with teachers. Students had learned that their own effort did not count for much and were willing to bear humiliating and oppressive situations so that they would be passed.

8.2.4.4 Assessment

The lack of an assessment culture was conspicuous. During the fieldwork from February to March in the first term no formal assessment of students were done in six of the eight

LAs. Assessment criteria were implicit, vague and whimsical. Teachers allocated students marks without any formal effort by the students. For example, the technology teacher assessed groups of students on their participation in class. The NS and MLMMS teachers formally assessed students' cognitive competences in their subjects. In a diagnostic assessment the MLMMS teacher assessed students on being able to express common fractions as decimals and on identifying rational and irrational numbers. Similarly the NS assessed pupils grasp of compounds and elements in short tests. The LO teacher complained about how difficult it was to assess the moral outcomes of LO:

In terms of the aims of the LO area they want pupils to learn about healthy life style, communicate with other people – the elderly, the young – all these moral things and understanding each other even if you are different, accepting each other. These are hard to assess because you can't tell someone what to.

8.3 The Devastating Impact Of The Lack Of Basic Resources

The lack of suitable LA textbooks and duplicating paper at the school meant that students were totally dependent on the teacher, on each other or members of the community for knowledge. Printed LSMs were not used and children hardly ever read. Homework exercises that involved print media and written work were never set. Almost all schoolwork was oral in nature. A lot of lesson time was used to copy notes. This slowed down the pace of lessons considerably. The lack of duplicating paper exacerbated the problem as commented on by one of the teachers:

P: It's (the lack of duplicating paper) really having a negative impact on learning and teaching – let's look at the time constraints – I will talk from a maths perspective – I will often have to spend 10 to 15 minutes writing information on the board whereas that time learners could be actively engaged in some kind of task or activity – so because of no paper we are losing instruction time – you work out and add the time lost over a period of a year – you will be shocked by how many periods of maths have just been wasted.

The school functioned without duplicating paper the previous year as well. To solve the ‘paper crisis’, students were expected to buy a ream of paper and bring it in and students who did not bring in paper would not get worksheets.

D: So you would prefer to give them worksheets.

V: Right now we have a problem of copying paper – I have a lot of material – like I said I have a file – one could compile that into a worksheet each learner can have and just use that for the whole year, but last year and this year the problem was photocopying paper – we asked the kids to bring paper and they haven’t – only one child in my class has brought in photocopying paper out of 48.

D: What is being done about the problem because it impacts negatively on how much learners can do.

V: For this year we are simply waiting for them to bring paper cause it is sort of an agreement that students who do have paper will get worksheets and students who don’t bring paper won’t get worksheets in classes.

It has been shown that the structure of the curriculum, of knowledge, pedagogy and assessment favoured the transmission of everyday, community knowledge and skills. In the next section teachers’ identities are discussed.

8.4 Teacher Identities

Bernstein (1971) argued that it is the ‘subject that becomes the linchpin of the identity’ and that one source of resistance to integrated codes arises from strong subject-centred identities. He also argued that ‘the collection code is capable of working when staffed by mediocre teachers, whereas integrated codes call for much greater powers of synthesis and analogy, and for more ability to both tolerate and enjoy ambiguity at the level of knowledge and social relationships’. The collection code is underpinned by disciplinary based specialized identities that favour purism, are based on certain knowledge and ethno-centricism while the integrated code is based on post-modern attitudes towards knowledge that favour the disintegration of boundaries, the affirmation of both popular and mainstream cultural knowledge and pluralism.

Being agents and targets of curriculum change at once seemed to be too much. All teachers had acquired the technical jargon of C2005 and were using it well to describe the technical aspects of their work. This knowledge, however did not translate to meaningful and reflexive implementation. Many were interested in implementing the new curriculum in a mechanical manner, whether they had written outcomes, ACs, PIs and were doing group-work, without concern about whether the children were learning anything new. The majority of teachers did not have adequate and accurate foundational subject knowledge, they showed no subject loyalty and definitely did not have strong subject-centered identities. They could therefore be described as pre-modern discursive identities.

Six of the seven teachers evinced de-centred identities based on the market. These teachers described their aims in general and not subject terms such as ‘critical and analytical thinking’ and facilitating active participation of students. They held utilitarian ideologies and belonged to either the technological pragmatist or industrial trainer social group. All taught useful knowledge and skills while many added ‘obedience training’ judged by the autocratic and menacing social relations. The LAs were reduced to their utilitarian value at the expense of their intrinsic worth. EMS was devoted to economic utilitarianism, LO to personal utilitarianism, AC to both personal and social-reconstructionism, technology to personal and economic utilitarianism and HSS to social reconstructionism.

In the relay of power from macro to micro level, it is the teacher at the micro level through whom power is relayed. With the exception of the HSS teacher, all other teachers were a powerful presence in the classroom. The source of this power, however was not specialist discourses in the case of six teachers, but archaic and culturally-based power, teachers were respected positionally and not for their knowledge in their subjects. Due to poor subject knowledge these teachers could not teach specialised subject or LA knowledge.

There was a gap between these teachers' views of the subjects and their practices. While seven of the eight teachers thought that the subjects ought to be taught rather than LAs, only two teachers taught subject knowledge to facilitate deep conceptual understanding. As has been pointed out, the remaining six teachers taught everyday, community-based knowledge and skills but entertained private reservations of what they were doing.

Table 8.8 Summary Of Teacher Identities

Name	Aim	Ideology	Social Group	Identity
Dees (MLMMS)	Structure of subject	Purist	Old humanist Progressive	Retrospective
Ben (NS)	Structure	Purist	Old humanist Progressive	Prospective
Vumani (Technology)	Useful knowledge	Utilitarian (personal and economic)	Technological pragmatist	De-centred
AC (Zama)	Useful knowledge Obedience training	Utilitarian (personal and simple social reconstructionist)	Technological pragmatist	De-centred
LO (Tony)	Useful knowledge Obedience training	Utilitarian (personal)	Industrial trainer	De-centred
HSS (Mzondi)	Useful knowledge	Utilitarian (social reconstructionist)	Technological pragmatist	De-centred
LLC (Steven)	Useful knowledge Obedience training	Utilitarian (personal)	Industrial trainer	De-centred
EMS (Kevin)	Useful knowledge Obedience training	Utilitarian (economic)	Technological pragmatist	De-centred

Their own experience as students within the Bantu Education system militated against teachers from developing a subject-based identity. The subjects were associated with negative experiences: 'I mainly hated the way the maths teacher taught – always with a cane!' The HSS teacher viewed the subjects, rather than BE as causal in stunting intellectual growth, and in not providing access to career opportunities:

D: What's your idea about subjects, you know in the past we did subjects but now we do learning areas – what do you think about that?

M: Ya, I mean it was a good thing, considering I mean our previous education was not that good – learning the subjects cannot take us anywhere – but now since we have a new government – I think the introduction of these new LAs – it's okay, it's good.

D: When you say the old subjects took us nowhere, what do you mean by that?

M: I mean, most of us who studied Bantu education – this education was designed for us not to think you know – that's why you would find many graduates don't get jobs because they don't have the knowledge they supposed to – you are effected – many people especially Blacks who finished Matric who studied Bantu education – most of them are at home – maybe here in Sobantu about 30% of matriculants have been in that situation – they have matriculated but they have to stay home for years doing nothing –

To this teacher the LAs were better because a new government introduced them.

Teachers dismissed their education as teachers, under the system of Bantu Education, as worthless in informing their work as teachers:

What I learned at college has little impact to what I am doing due to that poor approach they fed us with. I have developed through everyday experience and workshops.

The HSS teacher thought that mathematics was about 'using your brain' and HSS was about writing notes:

D: If you take HSS and compare to another learning area, what's different about it?

M: Well the difference is that maths you have to count there and you have to use most of your brains – most of the time you have to use your brains – you have to concentrate – but in HSS what you do there is write notes most of the time.

The teacher's classroom practices of 'giving notes' corresponded with his beliefs.

The NS and MLMMS teachers had strong subject-centred identities. Both are BSc. graduates with mathematics and science as major subjects. The mathematics teacher evinced a retrospective identity. He was quite open about belonging to the 'old school':

Firstly I would prefer the old maths because I belong to the old school ...with OBE they wanted an education where you look at it across the curriculum – in that aspect it has its disadvantage.

He thought of mathematics in absolutist terms, held purist ideologies and belonged to the old humanist social group although he did use a few progressive pedagogic strategies. He defined his goal as to 'to empower learners such that math and science is accessible to learners and they gain proficiency in these fields'. He valued mathematics as a body of structured pure knowledge that is intrinsically worthwhile and taught the structure of mathematics as a theoretical discipline, with central unifying concepts for its intrinsic worth as well as for the future Matric examination. He valued decontextualised rather than contextualised mathematics. He focused on students' intellectual development in mathematics and not with moral and practical judgements befitting social and political ideology as required by MLMMS. He also thought that mathematics is an individual effort and separate from the affective domain:

Like I mean how do people actually identify with it – and it is not something that they are used to all the time – so it's something that is abstract and one is bringing it into a contextualised environment – that's where the problem lies I think – there is little link with real life issues ... okay, it develops the cognitive domain – it helps people to become logical and be sequential and to think – but that is basically not used in real life situations – its more to develop the person – his personality and cognitive skills

To this teacher mathematics was unique because it has its own unique language and epistemic operations:

If you look at most other subjects they use language as the basis of communication – but when it comes to maths – maths is a totally different language – in other subjects like history, geography ... the basis is English or Zulu – but one cannot use that particular language when it comes to maths because maths has certain symbols, principals, theorems, laws which is a language on its own – in this aspect it is unique...

The science teacher came closest to Bernstein's prospective identity. He held a social constructivist philosophy of knowledge. Of all the teachers in the school it was only this teacher who reflected on the nature of knowledge. Consider this teachers view about scientific knowledge as tentative.

D: Tell me in science do you think there is some knowledge that is universal and objective?

B: You mean whether science is tentative or just fixed – science is tentative – it's not just fixed – I think so – because even if you look at the atom – the theory is not complete so far so it is dynamic and I think it is the most dynamic area in learning – it's always changing – it is not fixed and even the concept – at times we need to challenge the concepts – it's only that maybe our standards of teaching has not reached that level where we actually challenge the concept we are still battling with the understanding of the concept but later on especially at higher levels they need to challenge these concepts because it changes – so science is dynamic and changing – there is no timeless knowledge.

D: And the periodic table?

B: Even that they are still adding some elements there so you need to look at that perspective it's not fixed in that sense.

The teacher taught the tentative nature of science when he explained the development of knowledge of the atom. He traced the development of the first model by Dalton in 1803 to Thompson's model in 1897 to the Rutherford model in 1911 up to the currently accepted orbital model. What was clear was the social and temporal nature of knowledge. He also made their contribution explicit by telling the pupils:

If you are going to be a scientist you can say something about this. Like the mathematics teacher he identified with a purist ideology and belonged to the old humanist social group. Both teachers taught the knowledge and structure of their disciplines by using progressive pedagogic strategies. The NS teacher defined his goal as that 'learners understand science and they develop interest in it.

8.4.1 Epistemological Difficulties

Teachers commented on the difficulty of attempting to integrate their LAs with the phase organiser environment:

At times it is very problematic that the whole school have to use one phase organiser because in some learning areas you cannot take the phase organiser selected by the school which will fit into your learning area – for example you can't take environment and put it in MLMMS and EMS.

The LO teacher also had similar ideas when she said 'there is nothing under environment in life orientation'.

The second difficulty arose out of a concern that not enough subject knowledge would be taught.

P: My gut feeling is that basically I don't think enough subject knowledge and subject content is being covered as such – because if you take it in isolation – you take a certain situation – a particular situation only allows itself to cover a certain amount of content not more than that and because of that there you will find that if you look at it from the learner's perspective they are basically hanging on a string from here, there and every where else, and is not being given the whole thing so it's just bits and pieces of knowledge.

Teachers were unanimous in their discomfort with teaching subjects they knew nothing about. For example the science teacher who is a Maths and Physical Science specialist indicated that he was comfortable with teaching science, biology and agriculture but would have to learn the geography aspect first.

I would be comfortable with physical science, biology and agriculture but with geography I will have to study that and another teacher would be comfortable with geography and biology maybe and not physical science and others would be another combination –

The EMS teacher commented on the LSMs that were based on 'general knowledge' and that neglected Accounting. He predicted that there would be higher dropout in Grade 10 when students are faced with Accounting for the first time:

Most of the working the learning material in Grade 9 they are based on general knowledge – there is not much accounting – whereas in Grade 10 they will be doing accounting – in Grade 10 we don't teach basic accounting we have to go straight to the subject matter so they don't know what accounting equation is – they are having a problem and by April they will run away

8.4.2 Socio-Economic Context

All teachers described the socio-economic status of the school as constraining them from delivering the best curriculum they could. Thus the mathematics HOD explained that 'the bread and butter issues are the most important ones at the moment'.

We had to now go around looking for chairs and for desks and books – where do we have the time to start looking at where we want to take our learners to a new level when we don't have the basic necessities and the basic resources – the bread and butter issues are the more important issues at the moment.

He also explained that all subject teachers were forced to teach life skills and not just subject knowledge:

I think and a very disturbing issue to one as a teacher because one as an individual is placed in a situation where it is difficult to be dealing with learners like that because rather than teaching maths you would be looking at teaching them life skills first and then the maths.

All teachers mentioned the lack of community/parent support as a serious problem.

8.4.3 External Regulation

With the exception of the HSS teacher all teachers expressed serious reservations about LAs rather than subjects being taught. Many of these emanated from contradictory external regulation:

- Lack of continuity between Grade 9, the final year of the senior phase of the GET band and Grades 10, 11 and 12 which was still subject-based.
- Lack of articulation with the knowledge and skills assessed in the high-stakes Matric examination that was subject-based.
- Lack of continuity with tertiary education at university that still used points allocated to subjects as gatekeepers.

Other factors related to the poor external support in the form of training teachers adequately to implement the new curriculum, the ineffectiveness of the training done and the lack of LSMs and learning programmes. The LO teacher thought that 'theoretically it is fine – they planned the thing and they thought everybody is going to be happy about it but practically most of it is not really possible'. Teachers dismissed the workshops as worthless and 'left one more confused than before'.

The crash courses and workshops were inadequate and teachers had nothing else besides their own experience to rely on.

Teachers at this school saw themselves as being compelled to follow policy to please the subject advisor who visited 'regularly' on account of the low Matric pass rate.

Let's say your subject advisor comes to school – he wants to see OBE in practice they come here regularly because our school had 36% pass rate but they don't go where the pass rate is 99% - so you have to show them these are the SOs these are the activities – these are the ACs these are the PIs.

Teachers, for various reasons, were concerned about the under-specification of subject knowledge and the lack of firm structural guidelines. They were disgruntled about the emphasis on students discovering knowledge:

In the department I think people have say we really need the subject matter so it should be there and we can use the methods of the OBE but the subject matter is there – there are notes that are needed – copy them, read them – make a test out of them so that they know – it's not always about them (students) trying to explore, trying to research – but we still have to get something – read the notes and still do that – read the notes you are going to write a test on Friday.

8.5 Comparison Between Official Curriculum And Actual Knowledge Taught

The school and the teachers seemed to be engrossed in a technical implementation of C2005. They timetabled LAs even though the qualifications of teachers did not match with LAs and used C2005 jargon (Review committee) proficiently. They seemed less concerned with whether students were learning anything new. In comparison with C2005 the school fell short in teaching many of the diverse forms of knowledge affirmed by C2005. Teachers made use of 'learner-centred' pedagogy in a mechanical rather than a reflexive way. Students were expected to know things and contribute to their knowledge, if they did not then they were not taught. The EMS teacher explained his practice of withholding pedagogic judgment 'as in OBE we are not supposed to tell them the answers'. He repeatedly did not explain nor mediate knowledge and left students

with wrong understandings. Teachers attempted to get community participation by setting students tasks that depended on community resources when they were aware of the crippling socio-economic conditions in the community.

8.6 Conclusion

Firstly, six of the eight teachers mediated low-status, utilitarian and everyday knowledge with low cognitive demand. These practices dominated as they took up 75% of instructional time. These teachers strongly insulated unspecialised knowledge. Their control over students was strong but their framing of specialised subject knowledge was weak. They also exercised weak framing between subject and everyday knowledge. Pedagogy was incoherent, unsystematic and served to negate specialised knowledge. Teachers withheld pedagogic judgement of students' constructions of knowledge because according to one of the teachers 'in OBE we are not supposed to give them the answers'. Epistemic operations were not only implicit but also non-existent. The sense was that teachers themselves did not know them. As if this was not bad enough, teachers taught inaccurate and 'untrue' knowledge. The active cognitive construction of knowledge was confounded. Much of the teaching did not make sense and probably bewildered students who were too docile and passive to ask questions. The slightest signs of resistance such as chatting and laughing amongst themselves, were swiftly punished publicly and harshly. Teachers did not respect nor care for their students. The assessment criteria used were vague, haphazard and whimsical. In these classes students were not reproducing specialised knowledge.

Secondly, only two teachers mediated pure, high status academic knowledge and skills for 25% of instructional time. They strongly classified their subjects from other subjects and from everyday life. Their framing practices steered and marshalled students' understanding of conceptual knowledge. These teachers taught the structure, knowledge and language of their subjects using progressive pedagogic strategies. They deliberately and systematically explained and mediated conceptual knowledge. These teachers facilitated the active cognitive and social construction of knowledge. Recognition rules

were explicit and many learners were observed to be successfully realising the realisation rule in each lesson. Complex cognitive demands were being made on the students. Students were being assessed on acquisition of complex cognitive competences. These teachers also showed more personal, friendly and relaxed social relations with their students. They also created the possibilities for intellectual enhancement and inclusion into these specialised discourses.

8.7 Section C Interpretation

The homogeneous population of the school both racially and economically was described in detail in Section A and the formal discursive analysis of the curriculum practices was presented in Section B. A re-interpretation based on the socio-historical and formal-discursive analysis is undertaken in this section.

The first and easiest level of integration, racial desegregation, (Jansen, 2004) had not begun at Strelitzia. All students were African students. The school had no White, Coloured or Indian students. With the exception of one of the Heads of Department who was Indian, all other staff were African. All students came from impoverished working class families. Needless to say, the other forms of social integration: staff and student integration, curriculum integration and in this case the reconstruction of institutional culture, were not evident.

South Africa has joined the international trend to make school development the schools responsibility by adopting the principle of 'self-management'. The principles of self-management are contained in Sections 20 and 21 of the SASA (1996). The aim of self-management is to shift important powers and functions from central departments and devolve these powers to local schools. Under self-management schools are the primary unit of improvement and development. To a large extent, school managers, educators, parents and learners are empowered to be responsible for educational and organisational matters in their schools.

The post-apartheid government legislated that public schools charge fees to supplement public funds (despite the ANC standpoint during apartheid that all children should have access to a free basic education). Thus, the governing body of a public school is mandated to 'take all reasonable measures within its means to supplement the resources supplied by the state in order to improve the quality of education provided by the schools' (SASA, 1996:21). The policy also provided for exemption from paying fees by parents with lower incomes than the threshold set.

In addition to deciding on school policy, Section 21 schools also manage the public funds allocated to the school for example, 'to purchase textbooks, educational materials or equipment for the school' and 'to pay for services to the school' (SASA, 1996). These policies absolve the government from blame for problems and failures at schools.

Having been granted Section 21 status Strelitzia had become responsible for purchasing its own textbooks, educational materials and equipment; and for paying for services such as cleaning the school, maintaining the gardens and grounds and similar expenses. Strelitzia qualified for a budget of R60 000 of public funds. These funds were, according to policy, to be supplemented by private funds generated by the school itself.

The exemption from paying fees provided very poor children, such as those who attended Strelitzia, with free education. In disadvantaged schools where the majority of students cannot afford fees, limited 'private' funds are collected to supplement public funds. More than eighty percent of the student population were unable to pay fees at Strelitzia. The socio-economic background of students was described in detail in the earlier section. 81% of the students in the sample come from homes where parents were unemployed and students depended on the state grants of their grandparents.

School fees to supplement public funds did not materialise as the majority of the students were poverty stricken and were unable to pay their school fees of R200. This meant that there were no 'private' funds to supplement public funds. The public fund of R60 000 was wholly inadequate to pay for essential services like electricity and water, telephone,

cleaning staff and garden maintenance. The electricity and water bill alone was R90 000 per annum. During the time of the fieldwork, the school was often written about in local newspapers on account of the outstanding electricity bill to the municipality, and, in the school itself emergency staff meetings were held to discuss the crisis. Telephone lines had been disconnected due to unpaid bills.

The lack of funds meant that learner support materials could not be purchased. The impact of the lack of basic resources on the quality of teaching and learning was devastating. Learners did not have support materials like textbooks or other LSMs such as commercially packaged learning programmes. If this in itself was not a major problem, the lack of duplicating paper meant that learners were not supported with printed media for their lessons. For the three-week duration of the classroom observations, printed reading materials were used minimally – students in the EMS classroom shared five worksheets in groups. In other classes no printed reading materials were used. This made lessons dominantly oral in nature.

The lack of funds to pay cleaning staff had a direct impact on instructional time. The lesson after lunch, every Friday, was used to clean the classrooms. The students themselves cleaned their classrooms. This arrangement was clearly not working. The untidy and neglected appearance of the school has been described in the earlier section. The impact of both the self-management and fee-paying policy on a disadvantaged school like Strelitzia was to exacerbate the poor socio-economic situation that existed.

The dire lack of funds boiled down to the inability to improve the quality of education provided by the school. As a formerly disadvantaged school, it continued to suffer from inadequate material resources. The impact of both the self-management and fee-paying policy on a disadvantaged school like Strelitzia was to exacerbate the poor teaching and learning conditions that existed during the apartheid era.

The deleterious impact of Bantu education on teachers' subject knowledge was clearly evident in what they taught. With the introduction of the Bantu Education Act of 1953, a

racially and economically stratified teacher education system had emerged. According to Sayed (2004), by the 1970s teachers were trained in racially and ethnically separate colleges and universities. This was coupled with a system of posting that allocated teachers to different racially segregated schools. Teacher education and posting was conditioned by the need to maintain racial segregation. Apartheid was supported and maintained by the key 'ideological state apparatus' Bantu Education. Enslin (1984) argues that the majority of teachers in South Africa, and the vast majority of Black teachers continue to be 'products of ...Fundamental Pedagogics' that held little 'hope of fostering a discourse offering a language of critique' (*idem*:67). With the exception of the Mathematics HOD who was Indian all the teachers at the school had been educated within the Bantu education system, 'a system of education in which the management of knowledge served the ends of social control, of creating the conditions conducive to stratifying racial groups' and to 'consign Africans to a tribal society in the reserves, but also to meet the demand ...for unskilled labour' (Harley, 1990:453). Most of the teachers' intellectual and professional growth that had been deliberately stunted as school pupils and college students within the system of Bantu Education had not been redressed.

For the majority of the teachers' subject socialisation was not as thorough nor as continuous as for teachers at Rosewood and Strelitzia. There was greater disjuncture across favourite subjects at school, major subjects at tertiary level and the subject or LA they were teaching. Teachers' negative attitudes to the subjects have been conditioned by both their experiences as school pupils and their education as teachers. Most of the teachers evinced weak subject and professional identities.

The current system of posting perpetuates racial segregation and the continuation of a dominance of poorly qualified teachers in previously disadvantaged schools. With the exception of the Indian Mathematics HOD, all teachers were Black. The school did not have any White or Coloured teachers.

Harley and Wedekind (2004) argue that meliorism, the doctrine that the world may be made significantly better by rightly-directed human effort, assumes such an intensity at

times of dislocation and crisis that commitment to a vision of 'what should be' clouds the ability to seriously consider 'what is', that it becomes self-defeating. The specification of LAs in place of traditional subjects did not take into account the existing qualifications of teachers that were subject based, the lack of qualified teachers to teach many of the prescribed LAs, and the existing lack of resources to teach LAs like Technology and AC that are dependent on resources. But in spite of this reality, time was allocated to the LAs as if the human and material resources required were available. Strelitzia organized its curriculum according to LAs, as required by policy, without considering the existing expertise that teachers had. In complying with policy, even the little expertise in the school was not being used best. This had many deleterious effects.

Firstly, many LAs: AC, LO, HSS and Technology, were being taught by teachers who were not qualified to teach the LA or even a subject that constituted the LA. At Strelitzia AC, LO, HSS and Technology added up to 40% of instructional time. This meant that for 40 % of instructional time students were being taught by teachers with no qualification whatsoever in the LAs or in a subject in the LA. The AC teacher observed had been teaching for twenty years. Although trained to teach IsiZulu, Physical Training and General Science he was teaching AC. It was, therefore, not surprising that he laboured on horizontal discourses. The LO teacher had been trained to teach English and History, but was given to teach LO. Her lessons not only lacked substance and depth but also were deleterious to students' psychological well being. The HSS teacher had recently been educated at Indumiso College of Education to teach Travel and Tourism. He settled on writing the previous year's notes on the board for students to copy although they made little sense. The Technology teacher was qualified to teach Mathematics and Physical Science. Although the teacher taught knowledge specified in the Technology LA statements, the pace was so slow and the emphasis on the everyday knowledge of students that was working-class aligned served to impoverish the teaching and learning environment. All these lessons were characterised by poor intellectual quality, very slow pacing of knowledge, emphasis on everyday knowledge, questionable epistemology and were very boring and, in the final judgment quite pointless.

Secondly, teachers with expertise in a subject were not using their expertise.

The LO teachers expertise in History and English was not being used. Take the NS teacher who made it clear that he could not teach the geographic sections prescribed for NS, this teacher could teach Physical Science and chemistry excellently but was forced to teach sections of Geography he did not know. The OBE co-ordinator summarised the problem in terms of HSS:

Since I am a geography teacher so naturally I concentrate on things that relate to geography and I had difficulty in dealing with the content that was more historically orientated ... like the French revolution – so I had to go to the library to get some information, learn the information myself before I could go back to the class and talk about the French revolution and relate the French revolution to some of the things that are happening in South Africa. So the problem – we concentrate more on one aspect where one is comfortable in rather than looking at the whole thing which is actually history and geography - and it wasn't only my problem – you find that a history teacher will find difficulty in terms of analysing the map work because he has not done that.

Thirdly, although, both a teacher qualified to teach Technology and the necessary resources did not exist in the school – it was allocated the time as advocated by policy. The Review Committee (2000) recommended that Technology be merged with NS for these reasons. While this recommendation was rejected by the state in the formulation of the NCS, the impact of the lack of both a qualified teacher and material resources in this school impoverished teaching and learning for students badly.

The weak regulation of the curriculum at school level was evident in use of time, knowledge taught, slow pacing of knowledge, pedagogy, assessment and control measures used. Teachers' classroom practices were not regulated in any of the aspects mentioned. The use of time in the school was 'pre-modern' and far from optimal. Much official teaching time was used for other purposes. In the earlier section a detailed description of the misuse of official school time in the school was given. This included no teaching for the whole school day on official school days, rehearsals, cleaning the classrooms, raiding the community for school furniture and books, and the abuse of the school's policy to allow teachers and learners to leave school during the lunch break. The depletion of instructional time arising from organisational arrangements was

exacerbated by teachers' observance of time in the classroom. Although the time-table punctuated time in fixed units per LA, teachers were often late for their lessons, sometimes did not show up at all, frequently left the class during lesson time, left earlier than the end of the period and accommodated many disruptions to their lessons. According to one of the HODs, the morning meetings fell away because teachers habitually came late to school. Management of time in the classroom was idiosyncratic and poor in most of the classes observed. The lessons started late, classes took on average about ten minutes to settle down, and lessons often ran into the next lesson that was accepted by the next teacher.

With reference to curriculum structure it has been pointed out that many subjects and areas of study were not being taught at all firstly, because these subjects were not offered in the case of Home Economics, Art, Accounting, Computer Literacy, Physical education, Media or Library Education, Speech and Drama, Music, Biology and secondly, because a subject within a LA was being taught at the expense of other subjects in the LA as in culture being taught in AC and Business Economics in EMS. This meant that Accounting, Economics, Art, Music, Speech and Drama were not taught either. Then of the eight LAs offered, four were taught by teachers with no qualifications in the LA at all. In unravelling the impact of this for each LA: AC was interpreted and taught as African culture in a way that denied epistemological access to the four disciplines making up the LA – Art, Music, Dance and Drama. The HSS being taught denied students epistemological access to History and Geography. The Technology being taught trapped students in their own social class position. The LO teacher was driven to get students to accept that they could not aspire to the high-status professional occupations. Of the four teachers that were qualified to teach their LAs, two teachers diluted specialised subject knowledge to a great extent. The LLC teacher used valuable lesson time to 'preach' moral lessons to students rather than teach poetry, plays and novels or reading, writing and speaking skills. The EMS teacher taught basic utilitarian knowledge needed to open and run small or micro businesses. It was just in MLMMS and NS that students were being intellectually enhanced and included in specialised subject discourses. The harsh

reality was that students were being denied intellectual enhancement and inclusion in many specialised subject discourses.

Within the context of weak school regulation, what individual teachers actually did in the classroom varied and was the result of each individual teacher's ideology or core regulation. What knowledge was taught seemed to be at the whim and fancy of individual teachers. Just three teachers (Maths, Science and Technology) chose topics from the syllabus and curriculum statements while the other teachers were nonchalant and unsystematic. In HSS the teacher reneged the obligation of deciding what to teach by simply teaching what the previous years pupils learned although it was a hotchpotch of meaningless unrelated concepts. The LLC teacher taught 'qualities of a good learner', a topic difficult to be justified as subject knowledge and skills. The EMS teacher merely followed the LSMs although much did not meet the requirements of sequencing of knowledge to facilitate the vertical integration of meaning. Worse still, the LLC teacher justified his lack of teaching on the basis of a personal dispute with the principal. Many of these teachers were happy to suspend their own judgment and mechanically followed the OBE coordinator's directions.

The lower status and value attached to the traditional subjects in the practice of six of the eight teachers meant that teachers lacked accepted norms and standards against which to judge the quality and depth of student responses. Other findings included learning topics being dealt with at low levels of conceptual knowledge, tasks being set at low levels of cognitive challenge involving recall of simple information. Not much systematic teaching - the extension, modification or elaboration of students existing cognitive schemata - was being done. The 'null curriculum', or what teachers failed to teach, became relevant. The slower pacing of knowledge in the lower SES school, exacerbated by the lack of learning materials, resulted in large amounts of instructional time being used to copy notes from the board

In a community where unemployment was more the norm than the exception it was no wonder that the education the school offered was aimed instrumentally at equipping

students with low-level skills for the work place. There were no illusions about the purpose of schooling as the mission statement revealed ‘we strive to produce multi-skilled youngsters who can take their place with pride in the workplace’ that the school made skilling for the workplace its main purpose. Utilitarian ideology dominated teachers’ views about knowledge. Six of the eight teachers made it their only goal of education. Worse still, they targeted very low level or unskilled and non-knowledge based occupations. The results of the matriculation examination (2002) was another indicator of preparation of students for positioning in working-class strata. Of the 129 matriculants, just 34% passed and of these only two students passed with exemption.

Only the science and Mathematics teacher held academic ideologies. While the Science teacher believed in the importance of Science as a gate-keeping subject for high-status professional occupations and taught to prepare students to access these, he aimed ‘that the learners understand science and they develop interest in it’ and that their ‘naive’ conceptions be dispelled by scientific understanding of phenomena. The maths teacher taught Mathematics for its intrinsic worth only and held strong academic ideologies.

It was just in NS and MLMMS, for 25% of instructional time, that teachers successfully mediated specialised vertical knowledge structures. Simple, common sense, everyday, horizontal knowledge discourses that retarded students’ intellectual development dominated the curriculum for 75% of instructional time. Indeed Gramsci (1971) argues that the narrow cultural experience of working-class children is an obstacle to the development of abstract and critical thought. The move from culturally embedded knowledge and everyday knowledge to theoretical specialised knowledge was not realised and students were being left in a new, disconnected realm of discourse. The learners would be unlikely to grasp the complex conceptual framework comprising the LAs. Indeed, the knowledge being transmitted served to entrap learners in segmental, horizontal discourses. Students were left with very simplistic knowledge that severely inhibited their capacity to reach the higher cognitive levels. The science teacher explained the lack of proficiency amongst teachers to move students to conceptual knowledge due to Bantu education:

The only problem is that it is difficult to change - in fact in every learning area it is difficult to use this new curriculum model new methods because you have to draw this every day knowledge – its not something easy especially because we were not trained for it – with us it was actually Bantu education so we cannot just change it's not that easy – it's difficult to do.

While Taylor and Vinjevold (1999) hold C2005 as accountable for the one-sided and extreme view of the relationship between school and everyday knowledges, teachers' limited foundational, practical and reflexive competences as subject/LA specialists and mediators of knowledge are salient influential factors. Where specialised concepts were attempted to be taught in an integrated way as in HSS, the result was a negation of vertical, conceptual meaning making due to segmented unrelated concepts being taught. Epistemological access to both disciplines was confounded.

The negation of knowledge due to negation of pedagogy hindered epistemological access to many subjects and LAs offered. Firstly, specialised knowledge was transmitted in the form of abstract unmediated notes that students copied from the board over many whole lessons. Secondly, students were set demanding tasks without any mediation, scaffolding or teaching at all. Thirdly, students' answers were often not adjudicated by the teacher as correct or incorrect, valid or invalid. Fourthly, abstract concepts were not predicated nor linguistically elaborated. Finally, the fact that students were not acquiring the recognition rule of each specialised discourse disadvantaged them for further study in the subject. The implicit and vague assessment criteria reinforced the lack of clarity in what was expected of students. The essence of the learning area, a set of logically connected concepts, techniques and arguments were not developed systematically and deliberately. The result that Taylor (1999) pointed out, is that students are left with an ad hoc, unrelated collection of half-grasped ideas and skills that he or she may be able to apply in the context in which they were learned, but which cannot be applied in new situations and which almost certainly cannot be used to generate new knowledge applied in this situation.

Table 8.9 Explicit Teaching Of Specialised Discourses

LAs	Explicit teaching of subject/area knowledge, epistemic operations and language	Explicit teaching of subject/area skills, values and attitudes	What competences? cognitive (C) or socio-affective (SA)	What complexity? Very complex (VC), complex (C) or simple (S)
MLMMS	3*	1	C	C
NS	3	1	C	C
LLC	1	0	C & SA	C & S
EMS	1	1	C	C & S
TECHNOLOGY	2	1	C	S
HSS	1	0	C	S
AC	1	0	C & SA	S
LO	1	0	C & SA	S

* 3 – always explicit, 2 - sometimes explicit, 3 - not explicit, 0 - not taught

Table 8.9 shows that specialised subject knowledge and skills were explicitly mediated in two LAs, MLMMS and NS, only. These teachers focused on the intellectual enhancement of students. In the Technology LA there was a mixture of specialised and everyday knowledge and of complex and simple cognitive competences. In LLC, LO and AC very contextualised, simple everyday knowledge, and simple cognitive competences were taught. In EMS simple utilitarian knowledge for direct personal and economic use were taught. The weak classification of specialist subject knowledge denied students from acquiring the recognition and realisation rules of each specialist discourse.

The key finding presented is that epistemological access to specialised high-status academic knowledge and skills had been minimised. The situation can be accounted for in terms of structural and historical factors emanating from both apartheid and current democratic distributive processes. There were strong residues of apartheid that account for the continuities, but some things had become worse due to recent decisions by the democratic government. The impact of three related pieces of legislation, the principle of self-management, Section 21 schools and the fee-paying policy that absolve the state from responsibility for conditions of schools are discussed.

Generally, the curriculum structure, knowledge, pedagogy, assessment and socialising structures for teachers supported the transmission of low status, integrated, utilitarian, everyday knowledge and skills. While intellectual enhancement was poor, hierarchical power relations were strongly maintained. The limited aim of reproduction of intellectual discourses, a key function of any school, was denied to students. Overriding the normative ideology and practices prevailing at the school, two individual teachers, NS and MLMMS, taught pure, high status academic knowledge and skills and created the possibilities of enhancement and inclusion into specialised subject discourses. Even in these lessons, however, the lack of printed LSMs resulted in very slow pacing of knowledge as students spent much time copying notes from the board. The deleterious collective effect of these factors was that epistemological access to specialised high-status academic knowledge and skills was negated.

Due to varying factors such as: teachers' lack of subject content knowledge, lack of basic printed and other learner support materials, slow pacing of knowledge, dominance of everyday horizontal discourses, incoherent pedagogy, and inaccurate epistemology the intellectual quality of the teaching-learning experience was either impoverished or wholly a negation.

As a fundamental human right, a basic education with basic quality ought to be financed by public funds than by private school fees. At grass roots level teachers at the former Black school did not accept this responsibility and saw it as a state duty:

I don't think we as teachers can address that (the lack of resources) it has to come from higher up – it becomes the responsibility of the government to address these issues.

In sum, Strelitzia like the elite Rosewood, was culturally and socio-economically homogeneous. Unlike Rosewood where the homogeneity served the pedagogical project, at Strelitzia the homogeneity served to lock the school into a self-referential, retrogressive enclave. Racial desegregation, social integration, curriculum integration and the reconstruction of the institutional culture of the school were not evident. The curriculum structure of the school corresponded very closely with official expectations. It offered

eight Learning Areas according to the time advocated by policy. The organisational arrangements left much to be desired. Instructional times were often disrupted and teachers were fully autonomous in disciplining students and in the curriculum they taught. The structures set in place like the OBE committee were largely dysfunctional. The school lacked basic resources, and teachers were poorly or under-qualified. Horizontal knowledge discourses, simple utilitarian ideology and incoherent pedagogy dominated classroom practices. Resistance from students was forcibly put down by the use of corporal punishment. The consequence was that students were being denied epistemological access into socially valued specialised knowledge discourses. The school educated for low-level programmable, generic neo-Fordist skills. The concepts of classification and framing were not useful to describe the curriculum practices because the goal of intellectual enhancement could not be taken for granted in the majority of the cases.

8.8 Conclusion

In answer to the question, ‘Why do teachers teach as they do?’ academic qualification and professional training are key influential factors. The principle of self-management and the fee-paying policy has failed to take cognisance of the plight of previously disadvantaged schools. Also the distribution of unqualified and under-qualified teachers contributes. Then teachers rely on their own poor experiences under Bantu Education. The school context reflected both, its particular historical past and recent decisions made by the democratic government to effect distributive justice. The current context of teaching and learning of the school shows major continuities with its historical past as a disadvantaged school still aimed at preparing students for low-status unskilled labour. But for minor superficial changes, apartheid might still be the ruling social order for this school. National curriculum and funding policies further disadvantage previously disadvantaged schools. This would entrench inequality rather than address it.

The apartheid structured socio-economic inequalities have been exacerbated by the ‘fee-paying’ policy. The apartheid structured intellectual and managerial inequalities persists

with the school being staffed by predominantly Black teachers who are ‘products’ of Bantu Education. With this backdrop the ‘self-management’ principle as the means to improve and develop schools was ineffective to do so. The lack of sustained, substantial and meaningful extension of teachers weak subject knowledge is a ‘double whammy’, it denies them the opportunity of intellectual enhancement and disables them from teaching such socially valued knowledge to their students. Students’ success in the low-status knowledge areas masked their failure in academic terms. Young provides an apt description:

By creating new courses in ‘low status’ knowledge areas and restricting their availability to those who have already ‘failed’ in terms of academic definitions of knowledge, these failures are seen as individual failures, either of motivation, ability or circumstances, and not failures of the academic system itself. These courses, which explicitly deny pupils access to the kinds of knowledge which are associated with rewards, prestige and power in our society, are thus given a kind of legitimacy, which masks the fact that educational success in terms of them would still be defined as failure. (Young, 1971:318.)

The curriculum practices denied students from both, socialisation into strongly classified and framed specialised subject discourses and from weakly classified and framed integrated knowledge. They were not acquiring the specialist pedagogic code.

Overall the curriculum being transmitted served to entrap learners in a segmental, horizontal discourse. Stephen (1967) explored the problem ‘that grimly utilitarian cultures tend not to survive very long, collapsing in the face of some novel threat, but that cultures which cultivate the decorative and playful tend to find, somewhere in that cloud, the resources to meet most challenges’ (cited in McPherson, 1995:277). The utilitarian knowledge taught was coupled with positional, authoritarian and archaic power relations that taught students to obey and accept the situation. The curriculum prepared students for positioning in social strata that required basic, everyday knowledge and skills.

Many of the children of the marginal classes may indeed have a recognition rule, that is, they can recognise the power relations in which they are involved, and their position in them, but they may not possess the realisation rule. If they do not possess the realisation rule, they cannot then speak the expected legitimate text. These children then would not have acquired the legitimate pedagogic code, but

they will have acquired their place in the classificatory system. For these children the experience of school is essentially an experience of the classificatory system and their place in it. (Bernstein, 1996:32.)

It was only the mathematics HOD with his past experience in ex-HOD schools who was aware of students' acquiescence to the oppressive situation that existed: 'learners here fail and they just accept it, you know, as one of the things that happens to them and many come and repeat the grade and carry on'. Teachers subject pupils to shallow cognitively unchallenging activities and crush any glimmer of resistance from pupils very harshly. Pupils had no expectations with regard to what and how they learn or of any worthwhile activities happening at all.

As a fundamental human right, a basic education with basic quality ought to be financed by public funds than by private school fees. At grass-roots level the schools teachers did not accept this responsibility and saw it as a state duty:

I don't think we as teachers can address that (the lack of resources) it has to come from higher up – it becomes the responsibility of the government to address these issues.

CHAPTER 9

INEQUALITIES IN CURRICULAR PRACTICES

In the previous three chapters, an analysis and interpretation of the curriculum of the three schools was done separately. The aim in this chapter is to describe the inequalities in curricular practices across the schools. There are four main sections: firstly, the socio-historical and current context of the schools are juxtaposed in Table 9.1 for purposes of comparison and interpretation; secondly the subjects and areas of learning offered at the three schools are compared; thirdly the curriculum practices of the three schools are compared; and fourthly an explanation of the inequalities follows.

The Matric examination results that determine students' chances of university entrance indicate gross inequalities across the three schools. 'Matric exemption' indicates a sufficiently high score for entry to a Higher Educational Institution. In 2004 the matriculation pass rates differed considerably. Rosewood had a 100% pass rate with 98,4% exemption passes, Fernhill had a 96% pass rate with 51% exemption passes and Strelitzia had a 56,8% pass rate with 3,4% exemption passes. This means that 98,4% of Rosewood's, 51% of Fernhill's and as few as 3,4% of Strelitzia's students were eligible for university education. In raw scores just 3 students of 88 students at Strelitzia obtained an exemption pass. This indicates that very few students at Strelitzia were being given the opportunity of a university education. In explaining these gross inequalities in exemption passes, cultural reproduction theorists would attribute it to differences in the socio-economic background of students. The main argument being made in this thesis based on an interactionist sociological perspective exemplified by Bernstein's code theory is that pedagogic practices in the classroom or the 'structural conditions' and 'discursive rules' of pedagogy generate practices of inclusion and exclusion in socially valued discourses and thus reproduce social inequalities.

The focus is on what knowledge was taught and how it was taught that enables inclusion or exclusion in socially valued practices. The aim in this chapter is to

highlight the inequalities in curricula practices that conditioned students' chances of inclusion or exclusion in socially valued discourses and practices. So while the general expectations of reproduction theorists, that socio-economic inequalities would be reproduced was being realized, the curriculum practices of the schools were characterized by gross inequalities as well.

9.1 Section A: Socio-Historical And Current Context Of The Schools

The gross inequalities in exemption passes were matched by gross inequalities in the socio-economic status of the three schools. In this section the socio-economic background of each school is briefly described followed by an outline of some of the changes that have occurred since the advent of democratic government in 1994. The tables are intended to provide an overview for a more detailed discussion that follows.

The current contexts of the schools were characterised by severe material or objective inequalities. The apartheid-determined geographical location of the schools presented very different images: a nature reserve and a former White residential area for Rosewood; and a municipal dump, heavy industrial area and former Black working class residential area for Strelitzia.

The elite independent school for girls, referred to here as Rosewood, charged tuition fees of R30 000 per annum. Other fees such as reprographic levy, development levy and excursion costs amounted to around R6 000 per annum. Most of the girls were from well-to-do White families. It is located in a previously White upper middle-class suburb and the medium of instruction is English. Like other elite independent schools, the school offers opportunities for overseas travel, highly specialized education in the performing arts, a range of professionally coached sporting activities, a range of extra-curricular activities such as entrepreneurial training, debating, science projects and community outreach projects. The school has a wealth of resources including Internet and e-mail access for each girl. The school has well-equipped buildings in spacious grounds.

The former White government-funded school, referred to here as Fernhill, was originally for White boys only. Located in a previously White middle-class suburb, Fernhill stands in approximately 4 hectares of playing fields and gardens. The school fees were R6 200 per annum. As the state paid many of the teachers, the fees collected were used to maintain the well-resourced infrastructure and hire extra teachers. Like the elite independent school, this school has an abundance of resources including well-equipped specialist rooms such as laboratories and a library.

The third school, referred to here as Strelitzia, was established by the apartheid 'Department of Education and Training' for African children. The school is located in a former African group residential area, colloquially known as a township. The township was developed as a residential enclave for Africans living in informal settlements, as, in the early 1920s, Africans had no official residential area within the municipal area and lived in very poor conditions. During the period known as the 'struggle' against apartheid, particularly in the 1980s, vandalism of school property and harassment of teachers was common as the school and teachers were targeted as symbols of Apartheid.

Table 9.1 Socio-Historical And Current Context Of The Schools

Criteria	Rosewood	Fernhill	Strelitzia
Type	Independent, girls only, Grades 0 - 12	Section 21 public, co-ed., Grades 8 - 12	Section 21 public, co-ed., Grades 8 -12
History	Roots in British especially English education	Former Model-C White school. Roots in British especially English education	Former DET Black school. Roots in 'Bantu Education' and a site of political struggle
Social system	Closed (social class; fees)	Open (relatively accessible by virtue of fees)	Closed (historical/political factors – apartheid structured enclave for Blacks, Group Areas Act)
Positioning to political struggle (pre-1994)	Outside the struggle	Mixture of inside and outside struggle	Inside
Site	About 3km from the city centre in a former White upper middle class residential area	About 3km from city centre in a former White middle class residential area.	About 4 km from city in a former Black township established as a residential area for Black working class.
Situational landmarks	Nature reserve	Within walking distance of a university, sports stadium, shopping mall, public park.	Flanked by a municipal dump and a heavy industrial area.
Population	Homogeneous	Diverse	Homogeneous
Norms	Consensual	Contestation	Consensual
Pupil control	Generally harmonious personal control	Generally serious control problems – positional and bureaucratic measures	Students are docile and obedient – positional control – corporal punishment exercised
Resources	Wealth of cultural, social and material resources – each pupil has internet and e-mail access	Adequate cultural, social and material resources – staff have internet and e-mail access	Lack of basic resources – no duplicating paper, in debt to municipality for electricity, telephone disconnected
Dominant goal	Academic and pedagogical	Lower academic, utilitarian but subsumed by need for control	Utilitarian – preparation for working class jobs
Extra-curricular curriculum	Wide range of professionally	Wide range of sporting, debating,	No sport in school, no opportunities for

	coached and tutored sporting, performing arts, musical, debating, public speaking and charitable activities	public speaking and a few charitable activities	debating and other extra-curricular activities
State rationalization and restructuring	Not affected	Lost government-paid staff but employed 15 governing body-paid teachers	Lost 12 teachers due to R&R process
Social effect	Reproduction of upper middle class	Reproduction of lower middle class	Reproduction of unemployed and working class
Pupil roll	-	1025	851
Teaching periods	50 one hour lessons over a two week cycle	56 fifty-five minute lessons per two week cycle	40 one-hour lessons over a eight day cycle
Teacher/pupil ratio	1:12	1:36	1:41
NTPs*: L1	10	8	2
L2	20	16	6
Human resources			
Principal	2	1	1
Deputy principal	1	2	1
HODs	9	9	4
Level 1 subject teachers	-	31	21
GB teachers	-	15	0
Special teachers (for example, sport)	3	2	0
Secretaries	3	5	1
Ground staff		1	0
Technicians	4	10	0
Cleaning staff		4	2
Security staff	2	1	1
Library/resource centre staff	4	1	0
School fees	R30 000 per annum	R6 300 per annum	R200 per annum
Matric details (2004)			
No. Of Matrics	63	185	88
No. Passed	100%	96%	56,8%
No. Failed	0	4%	43,2%
Exemptions	98,4%	51%	3,4%
Senior certificate	1,6%	45%	53,4%
% Pass rate	100%	96%	56,8%

*Non teaching period

Table 9.2 Comparison Of Grade 9 Sample Details

Criteria	Rosewood (2002)	Fernhill (2003)	Strelitzia (2003)
No. of pupils	21	207	31
Gender split: Girls	21	69	11
Boys		141	16
Race: Black	5	178	31
White	14	22	-
Coloured	-	4	-
Indian	2	6	-
Parent occupations:			
Senior professional and managerial	100%	4%	
Lower professional and managerial		51%	2%
Clerical and skilled manual		29%	-
Semi-skilled and manual		14%	-
Unskilled manual		6%	7%
Unemployed			81%
Residential areas:			
Upper middle	92%	14%	-
Middle	8%	33%	11%
Working		53%	89%

With reference to racial desegregation of students and staff, not much had changed at Rosewood and Strelitzia. All Strelitzia's students were African students drawn from the Black township adjacent to the school. With the exception of one Indian teacher all teachers at Strelitzia were African. Rosewood drew mainly White and a few Indian and Black students from within the country as well as abroad. While the majority of staff were still White and female, Coloured and Indian teachers had been employed to teach Mathematics, Accounting and Technology and an African teacher had been employed to teach Zulu.

Unlike both Rosewood and Strelitzia that showed little transformation and greater continuity with Apartheid structured historical privilege and disadvantage, Fernhill showed greater transformation as well as continuities with its Apartheid history. At Fernhill much transformation had occurred with reference to racial desegregation of students. Over 80% of the students at Fernhill were African students and the

remaining 20% were made up of White, Indian and Coloured students. The school drew its students from a very large range including within its catchment area many students who commuted by public transport from outlying Black townships like Imbali and Edendale. Of a total of 46 academic staff, 18 Non-White staff had been appointed. Two Indian HODs, seven African teachers, seven Indian teachers and two Coloured teachers had been appointed. Six of the seven African teachers were hired to teach Zulu and one to teach History.

In contrast to Fernhill that was both racially and socio-economically heterogeneous, both Rosewood and Strelitzia were internally homogeneous and stratified along race and class lines. Affordability of school fees was the critical factor determining admission of students. The social class alignment of parents, students and teachers created consensual teaching conditions at both these schools. Rosewood operated within the confines of the elite class taking its cue from other elite institutions in the country and globally. At Rosewood, the parents were professional and business people. All Rosewood students lived in elite and middle class residential areas. Strelitzia operated within the confines of the working class township that was developed for working class African people originally. The majority of the parents, 81% were unemployed and 19% were employed in unskilled jobs. Students lived in working class or squatter settlements and were visibly impoverished.

The student population of Fernhill was socio-economically diverse. Students lived in a range of socio-economic residential areas with 53% living in lower socio-economic residential areas, 33% in middle-income residential areas and 14% in upper-income residential areas. With reference to parent occupations, 4% of the parents were senior professional and managerial; 51% were lower professional and junior managerial; 29% were clerical and skilled manual workers; 12% were semi-skilled manual workers; and, 6% were unskilled manual workers.

If democratic distributive processes found it difficult, if not impossible, to transform the egregious infra-structural or locational inequalities of the schools, the Apartheid structured inequalities in the distribution of material and human resources were persisting. Rosewood enjoyed a wealth of material and human resources; Fernhill also had adequate material and human resources, while Strelitzia lacked basic material and

human resources. Students learned with hardly any printed materials due to the shortage over two years of duplicating paper in the school.

Teachers were more highly qualified at Rosewood and Fernhill than at Strelitzia. Whereas most of the teachers at Rosewood and Fernhill were graduates, and many were postgraduates, the majority of teachers at Strelitzia held teaching diplomas and certificates. Seven of the ten teachers at Rosewood have a university degree, two a four-year diploma and one a technikon diploma. At Fernhill (eight teachers filled in the questionnaires) five were post-graduates, two were graduates and one had a diploma. At Strelitzia three had university degrees, four had college diplomas and one a certificate.

State restructuring and rationalisation had varying effects at the schools. Strelitzia was hardest hit and had lost twelve teachers. Fernhill fended off some of the negative effects of the cutbacks by employing fifteen governing body teachers and Rosewood, independent as it was of state finances, was unaffected. The teacher/pupil ratio was the highest at Strelitzia. The number of non-teaching periods that teachers could use to prepare and evaluate students' work, decreased from Rosewood to Strelitzia. Rosewood and Fernhill had more management, support, administrative, maintenance and cleaning staff while Strelitzia could not afford essential cleaning and maintenance staff. Both Rosewood and Fernhill operated as juristic persons as advocated by policy and took legal steps to recover school fees from non-paying parents. At Strelitzia the majority of students could not afford and did not pay fees charged and legal steps were not taken to recover fees.

The profound inequalities in the objective and material conditions in the three school contexts was matched by profound inequalities in access to diverse forms of knowledge in the three schools. In the sections that follow the inequalities in subjects and areas of study offered and in knowledge taught across the three schools are described.

9.1.1 Inequalities In Subjects/Areas Offered

A comparison of the subjects/areas of study offered at the three schools, shown in Table 9.3, indicate significant differences. Firstly, the number and diversity of subjects/areas of study offered decreased from Rosewood to Fernhill to Strelitzia. Rosewood offered the widest range of subjects and areas of study. It offered a subject-centred curriculum made up of 14 separate traditional school subjects and a separate integrated programme made up of six areas of study.

Like Rosewood, Fernhill offered a wide range of subjects and learning areas. Table 9.3 shows the seventeen subjects it offered. In comparison to Rosewood the class observed did not do Biology, Geography, Speech & Drama, and Technology. Strelitzia offered eight Learning Areas. Students at Strelitzia were excluded from subjects such as Home Economics, Art, Accounting, Computer Literacy, Physical Education, and Media.

A comparison with C2005 also indicates significant differences across schools. Table 9.3 shows that C2005 policy allocated 40% of instructional time to Life Orientation, Arts and Culture, Economic and Management Sciences, and Technology. Rosewood and Fernhill largely ignored policy recommendations and concentrated on the subjects that are important for the Matric examination. Strelitzia timetabled eight Learning Areas with time allocations closely aligned with the official C2005 recommendations.

Table 9.3 Subjects/Areas Of Study Planned And Time Allocations In The Three Schools

Official C2005		Rosewood – two sets of curricula				Fernhill		Strelitzia	
Eight integrated LAs	Time %	Subject-centred 14 subjects	Time %	Integrated Programme	Time out of 6%	Subjects and LAs	Time %	8 LAs	Time %
LLC	20	English Zulu/Afrik./French	16 12	Research Project	25	English Afrik./Zulu	16 12.5	LLC - Eng. Zulu	10 10
MLMMS	13	Mathematics	16	Religious Education	8.3	Maths	14.2	MLMMS	15
NS	12	Science Biology	6 6	Counselling	16.6	Science	10.7	NS	12.5
HSS	10	Geography History	6 6	Computers	33.3	HSS	10.7	HSS	10
LO	10			Thinking Skills	8.3	Home Eco./LO	8.9	LO	10
A&C	10	Art Speech & Drama	4 4	CASE	8.3	Art, Speech & Drama	7.1	A&C	10
EMS	10	Accounting	6			B.E./Acc.	7.1	EMS	12.5
Technology	10	Technology	4			Computer Lit./Technology	7.1	Technology	10
Flexitime	5	Home Economics	4						
		Physical Education	4			Phys. Education	3.6		
		Integrated Programme	6			Media	1.8		

Table 9.4 Subjects/Areas Of Study Actually Taught In The Three Schools

Official C2005		Rosewood – two sets of curricula				Fernhill		Strelitzia	
Eight integrated LAs	Time %	Subject-centred 14 subjects	Time %	Integrated Programme	Time out of 6%	Subjects and LAs	Time %	8 LAs	Time %
LLC	20	English Zulu/Afrik./French	16 12	Research project	25	English Afrikaans	16 12.5	LLC - Eng. Zulu	10 10
MLMMS	13	Mathematics	16	Religious education	8.3	Maths	14.2	MLMMS	15
NS	12	Science Biology	6 6	Counselling	16.6	Science	10.7	NS	12.5
HSS	10	Geography History	6 6	Computers	33.3	History	10.7	HSS	10
LO	10			Thinking skills	8.3	Home Eco./LO	8.9	LO	10
A&C	10	Art Speech & Drama	4 4	CASE	8.3	Art	7.1	Culture	10
EMS	10	Accounting	6			Acc.	7.1	Business Economics	12.5
Technology	10	Technology	4			Computer Literacy	7.1	Technology	10
Flexitime	5	Home Economics	4						
		Physical Education	4			Phys. Education	3.6		
		Integrated programme	6			Media	1.8		

The second difference was in the allocation of time to the subjects or learning areas across the three schools. Rosewood and Fernhill largely ignored policy prescriptions and allocated more time to Matric subjects. Comparing the variance and standard deviations (shown in Table 9.4) of policy and the three schools make the difference clear. C2005 reduced the disparity in time allocations to traditional core and peripheral subjects. Core subjects like Mathematics and Science are allocated 13% and 12% respectively while peripheral subjects like LO and AC were allocated 10%. The standard deviation of policy of 1,06 and the variance of 1,1 indicates low deviation from the mean and low variance in time allocation to the different LAs. Strelitzia showed closest alignment with policy in time allocations to the LAs. The standard deviation was 1,7 and the variance was 2,9. The higher standard deviation of Rosewood and Fernhill (4.1 and 4.29) and the higher variance (16,9 and 18,45) indicate greater deviation from the mean and greater variance in time allocation to the subjects and LAs. Rosewood and Fernhill deviated greatly from policy and maintained the traditional higher status of core subjects and the lower status of peripheral subjects.

Table 9.5 and Figure 9.1 shows that all three schools allocated more time to 'core' subjects than prescribed by policy with Rosewood allocating the highest percentage and Strelitzia the lowest percentage.

Table 9.5 Variance And Standard Deviation

Official C2005				Rosewood				Fernhill				Strelitzia			
Eight integrated LAs	Time %	D from Mean	D	Subject-centred 14 subjects	Time %	Diff. from Mean	D	Subjects and LAs	Time %	D from Mean	D	8 LAs	Time %	D from Mean	D
LLC (L1) (L2)	10 10	0,5 0,5	0,25 0,25	English	16	8.9	79.2	English	16	9.75	95	LLC - Eng. Zulu	10 10	-1.1 -1.1	1.21 1.21
MLMMS	13	2,5	6,25	Zulu/Afri./ French	12	4.9	24	Mathematics	14.2	7.95	63.2	MLMMS	15	3.9	15.2
NS	12	1,5	2,25	Mathematics	16	8.9	79.2	Afrikaans or Zulu	12.5	6.25	39.0	NS	12.5	1.4	1.96
HSS	10	0,5	0,25	Science	6	-1.1	1.21	Science	10.7	4.45	19.8	HSS	10	-1.1	1.21
LO	10	0,5	0,25	Biology	6	-1.1	1.21	History	5.35	-0.9	0.81	LO	10	-1.1	1.21
A&C	10	0,5	0,25	Geography	6	-1.1	1.21	Geography	5.35	-0.9	0.81	A&C	10	-1.1	1.21
EMS	10	0,5	0,25	History	6	-1.1	1.21	Home Eco.	5.35	-0.9	0.81	EMS	12.5	1.4	1.96
Techno-logy	10	0,5	0,25	Art	4	-3.1	9.6	LO	3.6	-2.65	7	Technology	10	-1.1	1.21
Flexi-time	5			Speech & Drama	4	-3.1	9.6	Art	3.6	-2.65	7				
				Accounting	6	-1.1	1.21	Speech & Drama	3.6	-2.65	7				
				Technology	4	-3.1	9.6	Business Eco.	3.6	-2.65	7				
				Home Economics	4	-3.1	9.6	Accounting	3.6	-2.65	7				
				Physical Education	4	-3.1	9.6	Computer Literacy	3.6	-2.65	7				
				Integrated Programme	6	-1.1	1.21	Technology	3.6	-2.65	7				
								Phys. Education	3.6	-2.65	7				
								Media	1.8	-4.45	19.8				
Total	95		10,25		100		237.6	56	100%		295.2	100		26.38	
Mean	10,5				7.1				6.25			11.1			
Variance			1,1				16.9				18.45			2.9	
SD			1,06				4.1				4.29			1.7	

Table 9.6 Comparison Of 'Core' Subjects Across Schools

Subject/LA	Policy (%)	Rosewood (%)	Fernhill (%)	Strelitzia (%)
Language	20	28	28.5	20
Mathematics	13	16	14.2	15
Science	12	12	10.7	12.5
Geography/History	10	12	10.7	10
Total	55	68	64.1	57.5

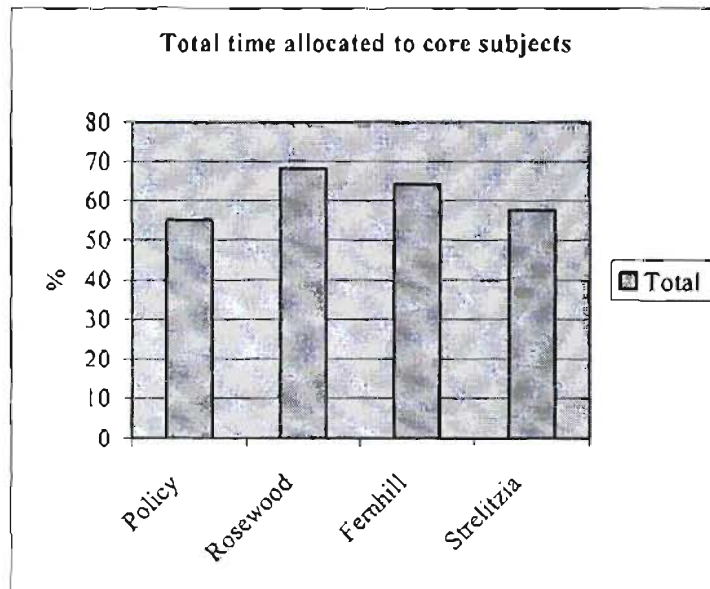


Figure 9.1 Total Amount Of Time Allocated To Core Subjects

In all schools more than half of instructional time was allocated to five 'basic subjects' languages, maths, Science, history and geography. It was only Fernhill that allocated less time to Science than advocated by policy. In the remaining eleven subjects more time than official prescription was allocated to these subjects. However, in contrast to Strelitzia, the rest of the time was allocated to a greater variety of subjects or areas of study at Rosewood and Fernhill. Both Fernhill and Rosewood, unlike Strelitzia that followed policy, allocated less time than prescribed by policy to LO, Art, Speech & Drama and Technology.

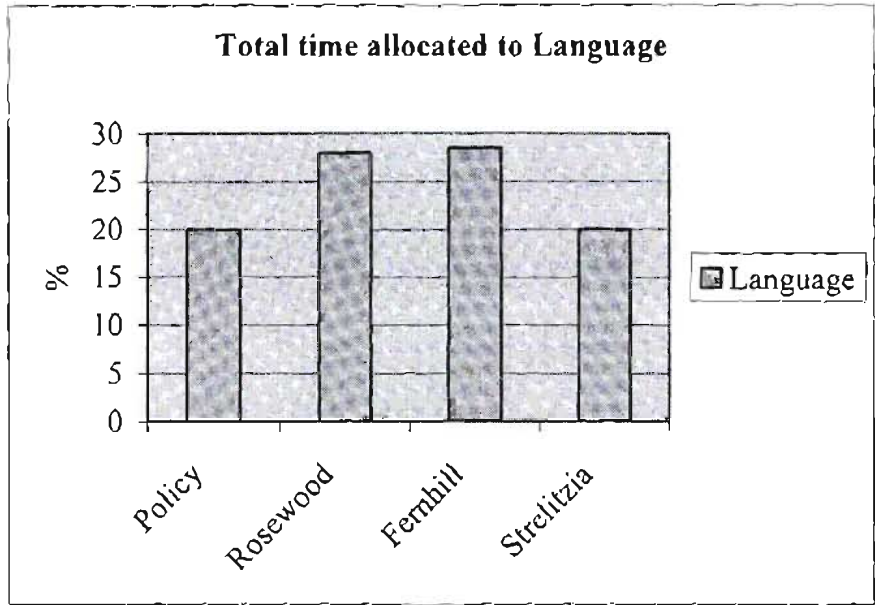


Figure 9.2 Time Allocations To Language Study

Figure 9.2 shows that Rosewood and Fernhill allocated much greater time to languages than prescribed by policy. Strelitzia allocated much less time than the other two schools to languages, but followed the time stipulated by policy.

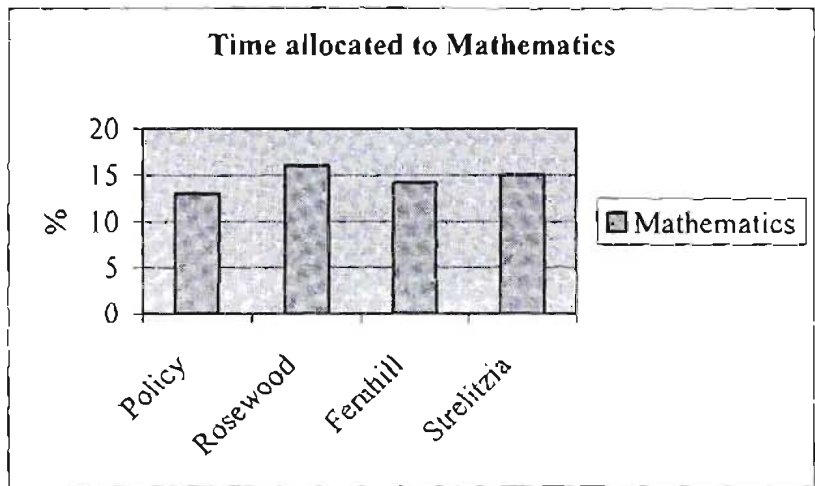


Figure 9.3 Time Allocated To Mathematics

All three schools allocated more time than required by policy to Mathematics, with Rosewood allocating the highest amount of time to Mathematics.

In sum, the elite school, Rosewood, enabled inclusion into a diverse range of core and non-core subjects and areas of study. Strelitzia offered the least diverse subjects and areas of study. The emphasis on core subjects of strong instrumental value for further

educational advancement in higher education at Rosewood placed students in an advantageous position. Strelitzia followed policy prescriptions and timetabled Learning Areas that were taught in ways that denied students access to subject knowledge and skills that Rosewood and, to a greater extent, Fernhill students were privileged to.

In the next section an analysis of the variations in the knowledge and skills taught in the three schools.

9.1.2 Inequalities In Knowledge Taught

The explicit teaching of subject specific knowledge and skills differed across the three schools, being always explicit at Rosewood and least explicit at Strelitzia. As subject specialists, teachers at Rosewood consistently taught specialist subject knowledge and skills in the subject-centred curriculum. The strong classification facilitated intellectual enhancement and the induction of students into the thinking processes of a range of subjects. Teachers explicitly taught the unique epistemic operations, complex and specialist linguistic structures, and concepts, procedures and routines of each subject. Teachers strongly framed specialised knowledge by deliberately and systematically introducing and predicating subject-specific notions. Teachers of these subjects expected complex cognitive competences of their students involving problem-solving using creative and critical thinking and application of knowledge in a subject.

At Fernhill, where teachers were subject specialists also and could teach the specialist modes of thinking in depth, in most classes students' contestation and flagrant disregard of their authority drew them into establishing and maintaining control rather than teaching their subjects for much of instructional time. Hence concerns over control dominated pedagogic strategies used. Generally teachers avoided interactive styles of teaching and resorted to transmission of knowledge. The fact that most classes had about 45 students, in rooms originally intended for 25, also promoted transmission modes.

In contrast to Rosewood, where teachers consistently taught traditional subject knowledge, different teachers at Fernhill taught a diverse range of knowledges: three kept to traditional subject knowledge, some of the Grade 9 English teachers included popular knowledge, the Art teacher included post-modern issues in the subject, the Science teacher taught utilitarian knowledge and in Life Orientation moral and practical judgments were taught. Teachers indicated that they had lowered 'their academic standards'.

Noticeably different from the other classes was the "A" stream whose students were selected because they were high scoring. For example, in contrast to 9J who were taught and assessed on non-academic, simple utilitarian mathematics, 9A was taught and assessed on 'real' mathematics.

At Strelitzia it was only the Mathematics and Science teachers that explicitly taught specialist knowledge. Subject knowledge was not apparent for the remaining six of the eight Learning Areas. Common sense or everyday knowledge, community knowledge, simple utilitarian knowledge, fragmented integrated knowledge and inaccurate knowledge dominated the curriculum.

9.1.3 Inequalities In Teaching Of Subject Skills And Processes

At Rosewood a general feature of all lessons across specialist fields, including the 'non scientific', was that teachers went beyond the functional value of the subject into the principles regulating the construction of knowledge in the subject. Pupils were given opportunities to construct knowledge using the conceptual tools of the disciplines. For example, Science projects required that pupils formulate a problem and use their knowledge of Science and the scientific enquiry method to set up an experiment and control, to manipulate variables, to observe effects, to collect and record data, to collate and analyse and interpret data and to write a report of the project, and also do a presentation.

In the subjects that were offered at Fernhill teachers generally taught the stock of knowledge of each subject as ‘given’ and not the procedures of the subject in most of the subjects. In Science, teachers made use of commercially packaged learner support materials that weakly recontextualised specialist Science knowledge and skills. Out of eight activities in the learner support materials, the two activities based on experimentation, observation, recording of data, and stating results were omitted by the teacher. The remaining six activities involving comprehension of newspaper reports of accidents arising from electrical faults or factual data were taught.

At Strelitzia the distinctive procedures of the subjects were the least explicitly taught, or not taught at all. This was accompanied by simple cognitive competences being taught. Mathematics involved giving students mainly unrelated routine mathematical tasks that required the application of learnt rules and procedures. Deep conceptual understanding of mathematics was not taught.

9.1.4 Inequalities In Teaching Of Integrated Knowledge

The integration of knowledge was implemented differently. The integrated programme at Rosewood showed weak classification between subjects. Each project required subject knowledge from at least three subjects to be used in an interdisciplinary manner. Although the boundaries between the subjects were weakened high conceptual level integration was maintained. The projects were cognitively challenging because they required the application of theoretical knowledge to a real world problem and the selective use of knowledge from different subjects based on the specific problem or theme.

Science teachers at Fernhill integrated school science with simple, directly utilitarian science to a greater extent. For example, an extract entitled *Factory burns down* had the following four questions set on it.

In groups discuss the causes of the fire.

Do you think the police are correct in saying the fire was caused by a short circuit?

What role do you think rats played in causing the fire? Explain your reasoning.

How could this fire have been prevented?

At Strelitzia integration of knowledge was characterised firstly by segments of unrelated knowledge from different subjects being transmitted in ways that made little sense and secondly, by the integration of subject knowledge with everyday knowledge at lower conceptual levels.

9.1.5 Inequalities In The Value Of Everyday Knowledge

At Rosewood everyday knowledge was sometimes recruited in the service of a particular discipline in a way that illuminated disciplinary understanding. After concepts were acquired, teachers referred pupils to disciplinary ways of using these concepts to make greater sense of everyday knowledge. At Strelitzia everyday knowledge was integrated with the academic to a greater extent. In Arts & Culture and Life Orientation teachers consolidated and organized the common-sense knowledge of learners as an end in itself. Everyday contextual knowledge with direct utilitarian value was privileged. For example, in an Arts and Culture lesson the teacher explained and summarized on the chalk board the do's and don'ts of story-telling:

- Don't scratch head or other parts of body.
- Don't laugh before your audience.
- You should control yourself.
- Don't mix facts – don't contradict yourself – even in court.
- Don't loose [sic] eye contact with audience.

9.1.6 Inequalities In Pacing Of Knowledge

The pacing of knowledge, in terms of the speed of introducing new concepts, decreased from Rosewood to Strelitzia. The number of subject specific concepts introduced and explained was the highest at Rosewood and the lowest at Strelitzia. Teachers at Rosewood school introduced new concepts at a faster pace. This was facilitated by the limitless availability of photocopied notes and worksheets. In a single geography lesson on clouds twelve photocopied worksheets, with much graphic and photographic images, was given to each student. The lack of photocopying paper and other printed learning materials at Strelitzia resulted in large amounts of

instructional time being used to copy notes from the board, resulting in very slow pacing of knowledge.

9.1.7 Inequalities In Complexity Of Cognitive Competences Taught

The complexity of cognitive competences taught varied across the schools. Very complex cognitive competences requiring problem-solving using creative and critical thinking, application of theory and synthesizing knowledge **from many subjects** were taught at Rosewood only. Complex cognitive competences requiring problem-solving, using creative and critical thinking and application of knowledge **in a subject** were dominant at Rosewood, decreased sharply at Fernhill, and were least evident at Strelitzia. In the case of subjects/areas that were not taught at Fernhill and Strelitzia, subject or domain specific cognitive competences were not taught at all. The single greatest exclusionary practice was the lack of intellectual enhancement of students at Strelitzia.

9.2 Discussion And Interpretation

The significant variations in curricular practices across the three schools were described in the previous section. Consistent with Chisholm *et al.* (2000), Taylor and Vinjevold (1999) and Graven (2002), teachers' grasp of subject knowledge and skills has emerged as a key factor in influencing the quality of teaching at the historically disadvantaged school, Strelitzia. The poor grasp of fundamental concepts in knowledge areas teachers were responsible for was a major obstacle at Strelitzia. The two teachers who were better qualified were to some extent able, in spite of the dire shortage of resources, to teach the concepts of their subjects. But these teachers like other teachers in the school were constrained by the dire lack of basic printed resources for learning purposes. Rosewood teachers who were well grounded in subject matter disciplines were better able to design learning activities that engaged students in complex cognitive activities, as well as integrate the learning of different subjects in relation to real life problems, and design and conduct appropriate assessment. The abundance of resources in the school supported teachers' efforts.

However, the situation at Fernhill disrupted this pattern. Although teachers at Fernhill had excellent grasp of subject knowledge, had professional dispositions and adequate resources were available the desired effect of high quality teaching did not follow. Unlike Rosewood and Fernhill that were racially and socio-economically homogeneous Fernhill reflected the demographic diversity of the 'rainbow nation'. The factors involved in the particular situation at Fernhill are discussed in more detail later on.

The stratification of knowledge at the elite and working class school was clearly evident. The greater autonomy, that Rosewood as an independent school enjoyed, empowered it to accommodate an integrated programme within its focus on an academic subject-centred curriculum. The knowledge and concepts of the core subjects were still highly valued at Rosewood, firstly, because of their instrumental value for access to high-status fields of study at tertiary institutions and secondly the subjects were the epistemological context for teachers work. At Rosewood the strong classification and framing of the dominant subject-based curriculum maximised students 'chance of entry' to high status fields of study in further education. More, significant, however, was the opportunity to develop the dispositions required of professionals within the weakly classified and framed integrated code institutionalised within the formal curriculum. Students were given opportunities to 'to be creative and forward looking, to initiate and control rather than be controlled', and to select, sequence, pace and time themselves.

The lower status and value attached to the traditional subjects at Strelitzia was due to many reasons. Firstly, senior management at Strelitzia indicated that they had no choice but to timetable the eight Learning Areas as advocated by official policy. Having produced 'poor' matriculation examination results, the school was under strong surveillance by the department of education. Hence, the management felt pressured to be seen to be implementing official curriculum policy. As a result, Strelitzia caved in to pressure from visiting departmental staff (the former inspectorate), to conform to national recommendations even though they lacked qualified teachers and specialised resources to teach the learning areas.

Five of the eight teachers did not hold any tertiary qualification in the Learning Area

they were teaching, for example the Arts and Culture teacher who held a two year teaching certificate, was trained to teach IsiZulu and Science but was allocated to teach Arts and Culture. The time for this Learning Area, which is made up of the distinct disciplines of music, art, speech & drama and dance, was consumed entirely by the teaching of traditional African culture.

The lack of both teacher training in these unfamiliar areas, and of learning materials to guide teachers in what to do, further disadvantaged the students.

The quality and amount of teachers' initial training were important. Teachers at Rosewood and Fernhill had much higher academic qualifications and better educational experiences than teachers at Strelitzia. Firstly, the amount of training differed: whereas all teachers at Rosewood and Fernhill were graduates, and many were postgraduates, the majority of teachers at Strelitzia held teaching diplomas and certificates. Secondly, the quality of initial training differed. Seven of the eight teachers at Strelitzia were educated as school students and teachers in historically disadvantaged schools and teacher education institutions. The lack of specialised subject knowledge meant that teachers lacked accepted norms and standards against which to judge the quality and depth of student responses.

Table 9.7 Comparison of teacher characteristics

Criteria	Rosewood	Fernhill	Strelitzia
Race	Majority White	Majority White	All Black
Tertiary education	Advantaged institutions	Advantaged institutions	Disadvantaged institutions
	7 graduate degrees, 2 college diploma and 1 technikon diploma	7 graduate degrees 1 college diploma	3 graduate degrees 4 college diplomas 1 certificate
	Average of 5 years	Average of 5 years	Average of 3 years
School and tertiary institution	Historically advantaged	Historically advantaged	Historically disadvantaged
Teaching experience	Average 17 years	Average of 9 years	Average 10 years
Subject identity	Visible and practiced by all	Submerged by control	Not apparent for 6 of 8 teachers

Teachers' lack of exposure to good teaching methods compounded the situation. The variations in teacher's foundational, practical and reflexive competences, due to past forms of social regulation, impacted on their capacity to teach rigorous and cognitively challenging subject-centred or integrated knowledge.

Teacher's personal professional biographies that were radically different influenced their perceptions of worthwhile knowledge. The majority of the teachers at Rosewood and Fernhill, being White, had stable professional careers as the 'struggle' for a just political order bypassed them. There was greater continuity in 'favourite' subjects as school pupils, major subjects at tertiary level and the subjects being taught for teachers. African teachers on the other hand were drawn into the struggle for a just South Africa, which was often very disruptive of their studies. For five of the eight teachers at Strelitzia there was disjuncture across favourite subjects at school, subjects studied at tertiary level and the subject being taught at school.

Teachers continuing 'life-long' education also differed. Teachers at Rosewood kept abreast of changes in their subjects at higher levels of thought and effectively integrated it in their teaching.

The greater diversity in curricula implementation at Rosewood and Fernhill was also a function of the wider range of material and discursive resources at their disposal – with the wealth of such resources producing greatest diversity in the Rosewood school. Differences in the availability of specially trained teachers in non-core subjects such as art, music, speech and drama across the schools affected the possible curriculum. The absence of such specialists at Strelitzia meant these subjects could not be offered to students.

With the exception of the Mathematics and the Science teacher other teachers taught directly 'useful' knowledge, weak conceptual knowledge, much everyday or commonsense knowledge, did not mediate and scaffold abstract concepts, did not teach the application of theoretical subject knowledge to real life problems, and gave less evaluative judgement to students. Further more, teachers often withheld evaluative judgment because of a belief that all answers were valid.

The mathematics and science teachers at Strelitzia were able to transcend, to some extent, the contextual normative curricular practices in the school. These teachers taught substantial, generally accepted valid Mathematics and Science knowledge to students. This is attributed to the qualitatively better educational experiences of the Mathematics teacher who was Indian. The African science teacher had recently completed his master's degree in education at an advantaged university. However, they also were constrained by the lack of basic material resources in the school.

In summing up I focus on the question: why were the state's two main levers of power – a national curriculum, and Grade 12 examinations – not exercising adequate influence at Strelitzia? C2005 is intended to promote high quality learning in many respects, and the examinations at the end of Grade 12 are also intended to promote quality learning although the papers set have not yet been changed from the traditional subject bases to the more ambitious integrated and applied approaches envisaged in Curriculum 2005. The key factor was that the teachers themselves lacked the subject matter competence, and professional standing, to be able to plan and implement high level cognitive learning in the subjects, and were unable to design and assess worthwhile learning activities. Another factor was the dire shortage of basic printed resources. Teachers could not depend on learning materials that will guide them and their students because these were not available. Where learning materials were borrowed by teachers they could not be duplicated for students because of the lack of duplicating paper in the school.

I now move to an interpretation of the situation at Fernhill.

The most important factor that influenced curricula practices at Fernhill was the demographic diversity that the school was grappling with. In spite of the abundance of resources, highly qualified and experienced teachers, teaching did not proceed smoothly. At Fernhill where much racial desegregation had been achieved amongst students and staff, staffing integration, curriculum integration and institutional ethos integration was lacking. The serious control difficulties experienced by teachers, facing politically empowered African students who spoke English fluently, led to much instruction time being used to control student behaviour. The bureaucratic

leadership and management of the school was orientated to assimilating African students into successful but traditional practices of the school developed with previous generations of mostly White students.

The retrospective institutional ethos of the school failed to include, accommodate and affirm racial diversity. Students seemingly opposed the school plans and conflict, contestation and flagrant disregard for teachers' authority in the classroom was the norm. Much to the chagrin of teachers, teachers' strong-subject centred identities were subsumed by control difficulties that students presented. The large class sizes, an average of 45 students in a classroom designed for a maximum of 25 students, exacerbated the problem.

Other than implementing 'dictated curriculum change' laissez-faire regulation of the curriculum at school level allowed teachers much autonomy in deciding what and how to teach. Teachers had intentionally lowered their academic standards, resented spending much class time regulating the behaviour of students, and were demoralised – they were not achieving their goals of teaching their subject as they thought it should be taught. Generally there was consensus that the school did not offer an 'academic' curriculum but one that was more instrumentally aimed at life, work and social skills development. The conscious lowering of academic standards by teachers denied students' access to achieving high academic standards. In comparison to Rosewood the actual curriculum taught was not as cognitively challenging.

Then, deep-seated inequalities in access to knowledge were institutionalised by the practice of stratifying students according to ability into homogeneous class groups that were taught different knowledge differently. The ideology of 'innate ability' that teachers believed in resulted in the distribution of different forms of knowledge for 'bright', 'average' and 'low' ability students. Non-academic, utilitarian knowledge dominated the curriculum in the 'low' ability classes.

9.3 Conclusion And Implications

As Bernstein's code theory holds the structural conditions and discursive rules of pedagogy differed across the three schools. The differential access to formal knowledge and intellectual enhancement at each school was a great obstacle to equity. Undoubtedly, the greatest disadvantage being perpetuated was the lack of intellectual enhancement of students at Strelitzia. Learning topics were dealt with at low levels of conceptual knowledge, and tasks were set at low levels of cognitive challenge involving recall of simple or everyday information. Not much systematic teaching - the extension, modification or elaboration of students' existing cognitive schemata - was evident at Strelitzia.

The apartheid-engineered subjugation of Black teachers' subject or integrated knowledge competences was the main cause for the poor quality learning opportunities for the students at Strelitzia. The posting of teachers in the democratic order had not altered the concentration of poorly qualified teachers at Strelitzia. Teachers who were highly qualified and committed but lacked knowledge and understanding of racial and class diversity were not being helped to develop relevant knowledge and skills in these areas. The Apartheid-structured lack of basic material resources at Strelitzia were persisting.

These factors together contributed to the stratification of learning experiences that policy sought to eliminate across schools. The current teaching and learning contexts of the three schools indicate the role of each school in the reproduction of social stratification. The 2004 matriculation results confirm the progressive degradation of results with 98,4% of Rosewood students, 51% of Fernhill students and as few as 3,4% of Strelitzia's students being eligible for university education. Notwithstanding individual variations amongst teachers, the actual curriculum structure, knowledge and competences taught at the elite and lower SES school helped to sustain a foundation for historical privilege and disadvantage.

The significant inequalities in curricular practices across the schools impact on students' life chances. The elite SES school curriculum maximised students' 'chance

of entry' to high status fields of study in further education. Students were being groomed for post-Fordist specialised knowledge and skills marketable in the country and internationally. At Fernhill, the higher ability class to some extent, but not to the same extent as Rosewood, were also being educated for high-level knowledge and skills while the majority of students were taught low-level knowledge and skills. All students at Strelitzia were being groomed for neo-Fordist generic low-level knowledge and skills.

Curriculum practices were not eliminating stratification of schools based on historical privilege and teachers were not being prepared for diverse students. In confirmation of Bernstein's theory 'for those at the top there (was) more, for those at the bottom there (was) less, with respect to their needs and conditions of effective support' (Bernstein, 1996). The fact was that, at the end of the first decade of democracy, deep-seated inequalities were being reproduced by the curriculum practices in the three schools. How the state intervenes to reduce the inequalities that students in former Black schools are trapped in is a priority for social justice.

CHAPTER 10

CONCLUSION, IMPLICATIONS, LIMITATIONS, FURTHER RESEARCH

The previous chapter presented a comparative analysis and interpretation of the curriculum practices of the three schools. The aim in this chapter is to present a unified, more generalised overview of the analysis that has been presented. The study began with the general question: Do actual school and curriculum practices of Grade 9 teachers in three contrasting socio-economic schools transform or reproduce social inequalities? The three phases of depth hermeneutical analysis: socio-historical, formal-discursive and interpretation/reinterpretation were used in the analysis of each case. In addition, a comparison of curricula practices across schools was undertaken and the curriculum practices of each school were compared with official curriculum policy. The findings of the study showed that there were significant variations in the curriculum structure and internal structuring of pedagogic discourse across the three contrasting socio-economic school contexts.

At the elite independent school, classification and framing were strong and teachers used progressive learner-centred pedagogy to induct students into specialised subject discourses. Teachers' strong modernist subject-centred identities flourished as the school and parents valued traditional academic subject knowledge. This school offered the greatest diversity of subjects and areas of study. The strong classification and framing of the subject-based curriculum maximised students' chances of entry to high status fields of study in further education. At the same time, the institutionalising of the integrated code within the curriculum gave students opportunities to practise the dispositions required of professionals. The school aligned itself with elite interests within the country and internationally, and selectively with the official curriculum discourse. The students were being groomed for post-Fordist specialised knowledge and skills marketable in South Africa and internationally.

At the very diverse former Model C School where much racial desegregation had been achieved amongst students and staff, staffing integration, curriculum integration and institutional ethos integration was lacking. The bureaucratic leadership and management of the school were orientated to assimilating African students and teachers into traditional practices. In spite of the abundance of resources, highly qualified teachers and politically empowered students who spoke English fluently, teaching did not proceed smoothly. Students seemingly opposed the school's ethos and plans with the result that conflict, contestation and flagrant disregard for teachers' authority in the classroom was the norm. Much to the chagrin of teachers, their strong-subject centred identities were subsumed by control difficulties that students presented. The concepts of classification, framing and teacher identity were less useful in capturing the classroom practices and the diverse realities that the school was grappling with. At the heterogeneous ex-Model C School contestation and conflict resulted in teachers lowering 'academic standards' and teaching towards social and life skills development. Teachers had intentionally lowered their academic standards, resented spending much class time regulating the behaviour of students, and were demoralised. Students in the high-ability A class were taught high-level knowledge and skills while lower-ability students were taught low-level knowledge and skills.

The former Black school, like the elite school, was culturally and socio-economically homogeneous. Racial desegregation, staffing integration, curriculum integration and the reconstruction of the institutional culture of the school were not evident. Instructional times were often disrupted, the school lacked basic resources, and teachers were poorly or under-qualified. Utilitarian ideology, simple everyday knowledge discourses, and incoherent pedagogy dominated classroom practices. Resistance from students was forcibly put down by the use of corporal punishment. At the ex-DET school the curriculum structure, knowledge, pedagogy, assessment and socialising structures for teachers supported the transmission of low status, integrated, utilitarian, everyday knowledge and skills. While intellectual enhancement was poor, hierarchical power relations were strongly maintained. The limited aim of reproduction of intellectual discourses, a key function of any school, was denied to students. The collective effect of these factors was that epistemological access to specialised high-status academic knowledge and skills was negated. Due to varying

factors such as: teachers' lack of subject content knowledge, lack of basic printed and other learner support materials, slow pacing of knowledge, dominance of everyday horizontal discourses, incoherent pedagogy, and inaccurate epistemology, the intellectual quality of the teaching-learning experience was either impoverished or wholly a negation. The consequence was that students were being positioned in segmental horizontal discourses. Thus students were being groomed for neo-Fordist generic knowledge and skills. The theoretical concepts of classification and framing waned in illuminating the curriculum practices of the school, as the ends of intellectual enhancement did not follow automatically.

The deep-seated inequalities in access to knowledge that have been institutionalised across and within schools have implications for social reproduction. The different knowledges imply different values, power and possibilities for students. Students did not equally enjoy their democratic pedagogic rights to intellectual enhancement, inclusion and participation in highly valued forms of knowledge in society. The differential distribution of experiences in schooling through five means: qualifications, resources, knowledge, pedagogy and teacher identity has implications for social reproduction. This point is summarised in the table below:

Table 10.1 Differences Across Schools

Criteria	Rosewood	Fernhill	Strelitzia
Qualifications	High	High	Lowest
Resources	Abundance of the best	Adequate	Lack of basic needs
Knowledge taught	Most diverse: Collection code dominant	Diverse: Collection code dominant	Least diverse: An incoherent form of integrated code dominant
Epistemological access to vertical discourses	Consistent and thorough	For high ability only and less consistent and thorough	Generally denied
Pedagogy	Visible, deliberate	Visible, obscured	Incoherent, invisible
Teacher identity	Retrospective	Retrospective	De-centred, pre-modern
Social effect	Preparation for positioning in upper middle class	Preparation for positioning in lower middle class and upper working class	Preparation for positioning in unemployed and working class

The most highly qualified teachers were in the independent and advantaged former White school while poorly and under-qualified teachers were in the majority at Strelitzia. The higher academic qualifications and qualitatively better professional experiences of teachers at these schools impact on their command and teaching of vertical discourses. The distribution of material resources followed the distribution of intellectual resources. At the independent school there was a wealth of resources; at the former Model C school there were adequate resources; but at Strelitzia there was a lack of basic resources. The availability of resources shapes the range of options that teachers have.

In terms of material and discursive resources the stratification of schools based on historical privilege was being reproduced. The knowledge taught, teachers' perceptions of worthwhile knowledge and appropriate classroom activities were differentiated across schools. At Rosewood, high academic standards facilitated by strong classification and framing of vertical discourses was the norm. At Fernhill, lower academic standards than at Rosewood was the norm. Classifications of vertical discourses were progressively weakened with the perceived 'ability' of pupils. The difference in teachers' expectations of students and who they really were provided the context for consistent contestation and conflict between students and staff and dysfunctional pedagogical relations. At Strelitzia, horizontal discourses dominated and were accompanied by the use of corporal punishment that forcibly subjugated students' resistance and epistemological curiosity. Students at the elite school were being prepared for immediate career positioning as 'high flyers' in higher education and through that, positioning in the elite class. Their matriculation results confirm this. Students at Strelitzia were not being prepared for university education and their matriculation results where three of 88 candidates obtained a university endorsement, confirm this. The fact that at Strelitzia, many vertical discourses were not being taught indicates that utilitarian and everyday knowledge was being recycled in an official school context, and that unsuspecting students were learning mostly simple cognitive competences that led to their positioning in segmental horizontal discourses. It was clear that the democratic distributive processes were not achieving distributive justice.

The greatest obstacle to attaining the goals of the official curriculum: democratisation, equity and social justice, is the differential access to formal and diverse forms of knowledge that has been institutionalised across and within schools. Curricular practices in the three schools were largely regulated by the inheritance of apartheid-structured political, social and economic inequalities.

Official curriculum policy sees the curriculum plan as at the heart of the education and training system and in spite of radical restructuring of the curriculum plan and the principle of equity being fore-grounded, the lack of sustained, substantial and meaningful extension of teachers' weak subject understandings and professional development, contributes to historical privilege and disadvantage being maintained. Achieving the goal of equity would necessitate allocation of greater material and non-material resources to historically disadvantaged schools and teachers.

There have been calls for curriculum policy to cease to be context-blind (Harley *et al*, 1998; Jansen, 2001, 1999; Lubisi 2000). The findings of this study have shown that the lack of attention to contextual realities by the 'one size fits all' policy functions serves to undermine transformative impulses. The diverse interpretations and practices across the three schools indicate the overwhelming conditioning role played by context. As Lubisi (2000) argues, much of the recent educational policy in South Africa has been speaking to the 'First World' component of South Africa, much to the marginalisation of the previously disadvantaged. Notwithstanding individual variations amongst teachers, the actual curriculum structure, knowledge and competences taught in each school contributed to the foundation for historically inherited privileges and disadvantages being sustained.

Drawing on Bernstein's theory of pedagogic discourse the study commenced with a focus on teacher identity and teacher practices in three contrasting school contexts. Data analysis revealed that teachers' subject identity was not the dominant factor in their practice in all three schools. The Bernsteinian concepts enabled an accurate description and interpretation of the curriculum practices and teacher identities at the elite independent school and the ex-DET school that were homogeneous in race, class and gender terms. At the elite school, teachers' strong subject-centred identities conditioned their practices. The teachers' weak subject-centred identities at the

former Black school resulted in stagnation in horizontal discourses. At the former Model C School, teachers' strong subject-centred identities were subsumed by regulative discourses.

In confirmation of Bernstein's theory, diverse forms of knowledge were being unequally distributed. Students at the disadvantaged school were being schooled in low level knowledge and skill for a neo-Fordist economy. The net effect will again be a massive 'wastage of working class talent' and Black talent, as able students find themselves trapped in a school that did not give them opportunities for further study. For the majority of students, apartheid structured race and class power relations were being reproduced. This points to the need for further studies of the actual curricular practices of schools across the socio-economic spectrum and thus into the maintenance of social stratification of schools based on historical privilege.

It is suggested that the issue of teacher identity, presented often as teachers' stories, has dominated studies of the context in the South African research literature. Ironically, contextual realities, particularly inequalities, were a dominant theme in the literature during apartheid times. Even now, as an increasing number of studies suggest that the gap between the historically advantaged and disadvantaged schools is growing, the conditioning effect of context tends to be underplayed. The present study suggests that context is an extremely powerful force in influencing and constraining actual outcomes in South African schools, and that the concepts with which the study began (classification and framing) have relevance to modern and homogeneous school contexts only.

10.1 Limitations of the research and further research

Mouton (2001) argues that the search for truth is an elusive ideal as it involves the pursuit of a goal that can never be realised. The three kinds of constraints – social, methodological and ontological constraints – prevent researches from producing true knowledge. Sociological constraints are shortcomings that originate with the researcher. Researching the entire Grade 9 curriculum in all subjects and LAs, proved to be a challenge as my own education was in specialist subjects and not integrated

LAs. My lack of specialist knowledge in all subjects and LAs was a limitation in the study. While at Grade 9 level my general knowledge in of the subjects made it possible to do the study, the greater specialisation at the high school level would make such a study very difficult.

Throughout the study the tension between case study methodology, that demands an in-depth understanding of a case, and the demands of academic research to reduce the host of contingent factors of three diverse cases to a point or an argument around a point, were most challenging. The in-depth study of three different cases, each loyal to diverging ideologies, necessitated the use of different concepts to analyse and interpret each unique case. The whole study at times was experienced as unwieldy and diffuse. The data overload necessitated the selective use of data that may have compromised the complex social reality of each case.

Specific problems for practice that emerged from the study for further research are now listed.

- Greater research needs to be done on the impact of the fee-paying policy; the principle of self-management and the granting of section 21 status to previously disadvantaged schools. The current system of teacher posting perpetuates the inequitable distribution of intellectual and managerial resources. The policy of decentralisation and the devolution of power and governance to schools is likely to benefit the middle classes who possess the necessary social capital to manipulate the system to their advantage, while for working class schools like Strelitzia the lack of material and non-material resources, the policy becomes the means for the entrenching of social inequalities.
- Where it was being attempted, the assessment of integrated knowledge designed to engineer desirable moral and practical judgments was a challenge to teachers. Teachers expressed their discomfort in judging the moral development of students.
- The LSMs being used need to be thoroughly researched. Firstly, a content analysis of the LSMs would illuminate much in terms of what knowledge was

recontextualised, their balancing of subjects, their conceptual depth, and subject specific skills. Fernhill was the only school that was making use of the OBE materials. In subjects such as Art there appeared to be a weak recontextualisation of the discipline and greater attention to linguistic issues. In NS the subject specific skills of science were downplayed and much factual data was presented. In EMS the subject of Accounting was almost totally absent. Secondly, the recontextualisation of the official LA curriculum policy would illuminate much as well. Thirdly, there is a need for research of topics within a LA across grades, to be done. Some topics seem to be repeated through the junior and senior phase. Topics such as ‘making a mask’, doing a family tree were repeated in ART and HSS and teachers were rightly wondering ‘just how many masks are children expected to make’ and ‘just how many times they are going to do their family trees?’ Fourthly, the knowledge contents across LAs within and across grades need to be researched. For example, the ‘descientification’ of science that arises from the inclusion of geology into NS undermines the teaching of the empirical skills of science.

- The institutional culture of former White schools that have become racially desegregated needs researching in terms of the regulative order in relation to the instrumental.
- How Black students cope in schools that are staffed by white teachers and how White teachers cope with Black students needs to be researched.
- In addition the implications of racially segregated schools such as Strelitzia for racial integration need to be studied.

10.2 Conclusion

Policies are rich in rhetoric on equity and social justice but have not had much impact at grassroots level in disadvantaged schools like Strelitzia. Bearing in mind that Strelitzia in governance terms is regarded as ‘advantaged’ and was therefore granted Section 21 status, one could speculate that teaching and learning conditions for more

disadvantaged schools could only be worse. The democratic government's 'authoritative allocation of resources', hamstrung as they were by the politics of negotiation and compromise on the one hand and globalisation imperatives on the other, have not attained social justice for a disadvantaged school like Strelitzia.

Brown and Lauder (2004) argue that the marketisation of education by the introduction of choice and competition advantages the middle classes who are more likely to have the cultural capital to make educational choices that best advantage their children. Soudien (2004) in analysing the operation of choice at South African schools claims that choice is a racial code. Thus in the South African situation the marketization of education would serve the interests of the White middle class and the emerging Black middle class and disadvantage the masses, resulting in social class and racial polarization of schools. The overall effect would be to segregate students in different types of schools. Students advantaged by such social arrangements would learn the kinds of knowledge and skills required in a post-Fordist economy while those that are disadvantaged would be schooled in low-level talent and skill for a neo-Fordist economy. The net effect will again be a massive 'wastage of working class talent', probably disproportionately Black, as students find themselves trapped in schools that do not give them university opportunities. The following quotation is thus a fitting conclusion to this thesis:

When education becomes a positional good and where the stakes are forever increasing in terms of income, life-chances and social status, powerful individuals and groups will seek to maximise their resources to ensure that they have a stake in the game by whatever means. Therefore how the state intervenes to regulate this competition in a way that reduces the inequalities of those trapped in lower socio-economic groups must be addressed, not only as a matter of economic efficiency but also for reasons of social justice. (Brown and Lauder, 2004:65.)

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APPENDIX A

Transcript of lesson observation

Lesson 2

The lesson begins at 8:05. The learners engage in casual chatter and ignore the teachers appeal “I am waiting for you.”

T: (in a stern voice) from now on you must keep your mouths closed – you must be listening. (Some continue to talk)

Teacher begins to review work done in previous lesson – goes over the table of numbers.

T: today we are going to change common fractions to decimal fractions.

I will show you how to do two examples and then you will do three examples on your own.

a. $\frac{1}{2}$ - what type of fraction is this? (No learner knows - tells them) – it is a common fraction – converting to a decimal is std. 5 or 6 work. (Proceeds to do an example on the board.

$$\frac{1}{2} \quad 2) 10 \\ \quad \quad 0,5 \quad \text{therefore } \frac{1}{2} = 0,5$$

$$\text{b. } \frac{3}{4} \quad 4) 300 \\ \quad \quad 0,75 \quad \text{therefore } \frac{3}{4} = 0,75$$

T: you must now do the next three in your group.

c. $\frac{2}{5}$

d. $\frac{3}{8}$

e. $\frac{1}{4}$

(gives the learners about 5 minutes)

Reviews the answers with them.

c. $\frac{2}{5} = 0,4$

$$\text{d. } \frac{3}{8} = 0,375 \quad 8) 3000 \\ \quad \quad \quad 0,375 \quad (\text{teacher discovers that learners don't know 8 times table –} \\ \quad \quad \quad \text{writes this down on the board)}$$

e. $\frac{1}{4} = 0,25$

(rearranges groups because some learners are talking constantly. Takes down the names of learners in each group)

T: we are going to the next section: changing decimal fractions to common fractions. (does two examples on the board and then asks the learners to do three examples in their groups)

- a. $0,7 = 7/10$
- b. $0,35 = 35/100 = 7/20$

T: do the next three examples in your groups.

- c. 0,6
- d. 0,125
- e. 0,85

(gives learners about five minutes to do work)

Reviews the examples on the board

- c. $0,6 = 6/10 = 3,5$
- d. $0,125 = 125/1000 = 25/200 = 5/40 = 1/8$
- e. $0,85 = 85/100 = 17/20$

T: we are now going on to the next section which is recurring decimals. (writes on board the heading – recurring decimals.)

Recurring Decimals

Change the following common fractions to decimals:

- a. $1/3$
- b. $1/6$
- c. $4/9$

what do you notice in each case? What do we call such decimals?

A student discovers the recurring decimal and talks to the teacher about it.

(Teacher tells the class that their notebook must start with page 1 and 2 having a record of the tables and page 3 a glossary – maths words and meanings.)

Lesson 3

The lesson started 15 minutes late. The teacher informed me that the department requires Matric entries. They sent the stuff yesterday and want it today and he will therefore have to leave his class and do the entries.

I looked after the class. They were very good. Talked softly and got on with their work.

The teacher set the class work – wrote it on board:

Changing common fractions to decimal fractions:

- a. $3/5$
- b. $5/6$
- c. $1/3$
- d. $3/11$
- e. $4 \frac{2}{5}$
- f. $-19/9$

g. $7/20$

Changing decimal fractions to common fractions:

- a. 0,3
- b. 0,12
- c. 0,425
- d. 0,9
- e. 0,46
- f. 0,24
- g. 0,2

Lesson 4

Asks learners to sit in places he put them in.

Exercise on the board. Explains how to do it in groups or pairs.

Copy and complete the following:

- a. $\frac{1}{2} = X/10 = 0,5$
- b. $\frac{3}{4} = 75/X = 0,75$
- c. $\frac{1}{8} = X/1000 = 0,125$
- d. $\frac{1}{4} = X/X = X$

What are the above decimals called?

T: Things you need to know – the denominator can be 10, 100, 1000 – if there is one number after the decimal then the denominator is 10, if there are two numbers after the decimal then the denominator is 100 ...and so on.

(gives the learners some time to complete their work and then reviews the answers on the board)

- a. $\frac{1}{2} = X/10 = 0,5$ $X = 5$
- b. $\frac{3}{4} = 75/X = 0,75$ $X = 100$
- c. $\frac{1}{8} = X/1000 = 0,125$ $X = 125$
- d. $\frac{1}{4} = X/X = X$ $25/100 = 0,25$

What are the above decimals called?

Terminating decimals – (write word and meaning in glossary)

T: Copy and complete by replacing X with numbers

- a. $\frac{1}{3} = 0, _ _ _$
- b. $\frac{5}{6} = X$
- c. $\frac{4}{7} = X$
- d. $\frac{2}{9} = X$
- e. $\frac{2}{3} = X$

What are the above decimals called?

Define above type of decimal.

Define rational numbers.

(gives the learners some time to complete their work and then reviews the answers on the board)

- a. $\frac{1}{3} = 0, _ _ _$ 0,333
- b. $\frac{5}{6} = X$ 0,8333

- c. $4/7 = X$ 0,571428
- d. $2/9 = X$ 0,222
- e. $2/3 = X$ 0,666

What are the above decimals called?

Non-terminating or recurring decimals.

Define above type of decimal.

Decimals that have a repeating pattern of numbers.

Define rational numbers.

Any number that can be written in the form a/b where a and b are integers – bto – as a terminating decimal – as a recurring decimal is known as a rational number.

The teacher leaves 10 minutes before the lesson is over because he has to attend a meeting. He sets the learners work on the board.

Activity

Work in pairs – write down whether the following numbers true or false:

- a. All natural numbers are whole numbers.
- b. All integers are natural numbers.
- c. All whole numbers are integers.
- d. All integers are whole numbers.
- e. All natural numbers can be written as improper fractions.
- f. All improper fractions can be written as whole numbers.
- g. All whole numbers are rational numbers.
- h. All natural numbers are rational numbers.
- i. All rational numbers are integers.
- j. All integers are rational numbers.

APPENDIX B

Interview transcript

D: How did you feel about me being in your classroom? I mean my presence in your classroom; did it bother you at all?

K: No, not at all.

D: and the girls

K: I think they are quite used to you as you have been in their class for a number of lessons. So they carried on as normal. It did not affect them at all.

D: What are your views on the policy move that we should have integration – that the sciences must be integrated into natural science.

K: I think that as high school teachers we are fiercely protective of the knowledge we have to teach, in other words, we are still working towards the Matric exam – so there is a concern that by integrating subjects too much we are going to lose the purity of the subject. So on the one hand we have agreed to accommodate the integration but on the other hand we have identified areas that we know that we got to cover and that is why we keep science as a pure subject and we integrate with the adapt programme and that is where we try to meet policy in WC. Where we try to reach the happy medium in TWC. There is a lot of discussion but we would prefer to keep our subjects pure and outside the science or biology classroom we integrate.

D: Is there any reason for that ... to keep the subject pure?

K: Yes it just that we feel that the content is suffering. They won't get the grounding that they would normally in a pure subject.

D: When you say the content will suffer what do you mean?

K: There are certain concepts that we have to teach in science and if we try and integrate a topic in science (I know this is OBE and I know you say this is what the outcome is) certainly in science we have to start with basics and teach the basics before - until they can reach the outcomes. Lets take electricity and its effect on the environment hydro-electric power schemes and things like that - I would find it very difficult to teach electricity without having taught the basics about electrical current is and how it is produced – so we find that we have to develop the basics – the ground rule and then we will be happy to integrate.

D: can you explain a bit about what is unique about science?

K: I think I am not sure I understand your question properly ... Science is unique along with maths in that it requires grounding, one concept is developed from a previous concept ... very often ... certainly in a high school. So we do cover topics – topics would require previous topics – we have to start with elementary concepts and build on those concepts.

D: So if you say that science is made up of sequential concepts and basics first how would you relate it to real life?

K: I think we have to bring that in a bit more perhaps – but if you look at the topic electricity we really try and relate it to the real world – look at energy – we really try and relate it to the real world what they are going to do now is look at the energy flow through a system which is absolutely vital in the real world- every single aspect of science is essential for the real world – physics is in the real world, chemistry is in the real world.

D: If children don't do science what do you think they would lose?

K : They would lose an appreciation of how things work – the relevance of anything in the real world ... everything is related to science and chemistry – and yet girls tend to find science difficult because they do not focus on the physical aspects – one way to assist them would be to make it more real for them but with the Matric exam we still have to get the basics done

D: In terms of its relationships with other subjects

K : Science and maths are very closely linked in that we require measurement and calculations, application of information in the real world in terms of – I think the subjects it overlaps very strongly with are maths then biology and geography – they use data – interpret the data – have a look at the effects of the data and extrapolate it backwards and even forwards – it's a lot of interpretation, collecting using that often

Ken : in science is there a kind of a hierarchy of knowledge of concepts and that hierarchy has to be respected

K : yes, there is as long as we have the Matric exam – there is a bit of conflict at the moment because we do have the Matric exam and the idea of integration could be such fun but if we ignore the basics then we have an enormous amount of work to catch up on in grade 10 –12 and also what will happen is that pupils will take science without really understanding what involved in it and I don't believe at all that all pupils are able to do science – you definitely have pupils who are interested in the arts or drama and find mathematical concepts difficult

Ken: Talking about integration you say that there is a kind of overlap with maths – in a way that surprises me, I am very bad at both – I would have thought that the methods are very different in both – maths uses a lot of deduction

K: so does science- an enormous amount of deduction

Ken: Okay

K: I think what we really do is if we are advising children whether to take science or not we always look at their ability to do maths – their logical reasoning – their deductive manipulation of formula – we find that the girls who are comfortable with maths are also comfortable with science

D: so you think that the grade 9 syllabus content is easy to relate to real life

K: it should be - certainly in science what happens with anything – you are sitting on a chair that's a force – I think that a lot of the concepts the girls are learning this year they are unaware that it relates to what happens every day – if you look at energy flow – energy is absolutely vital – we do light as well which is very definitely related – light overlaps with biology – it overlaps with art in how you see colours - chemistry we start very simply in grade 9 in fact so simply that it is not related to the real world as they see it – it is just teaching and basic concepts – but I will say yes

Ken : I want to ask a question about something I am worse at than science – feminist theory – science is quite hard science in terms of what one observes, measures and so on whereas feminism relies on how one relates to things in an intuitive kind of way

D: and feelings and so on

Ken : maybe what I am asking here is about science in a girls school

K: science in a girls school is not as easy to teach as in a boys school – we have two aspects of science – physics – boys have a natural feel for physics – physical concepts the physical happenings what happens when a car hits a tree, what happens when a force is applied – its going to change direction – accelerate – girls battle with that actual concept of physics and yet the chemistry girls are prepared to learn – when we mark the Matric we actually do a comparison between the chemistry and physics papers and the schools that we mark and girls achieve higher in chemistry and boys

achieve higher in physics – so when I teach physics I really struggle to get them to understand the real-life application of the physics

D: do you think its because chemistry is more learning

K: chemistry is more learning – the girls are prepared to learn – physics is right there they cannot get a feel for what is right there – they want to learn it – I don't know where it comes from in terms of feminism – I don't know why either – I preferred physics but girls generally prefer chemistry – I don't know why they actually grow up not being able to look at the physical side of things

D: in terms of integration how do you feel about biology and physical science being put together

K: am this is not going to be quoted but actually I find – my love is not biology – and I think the biology teachers their love is not science so it becomes very difficult to actually ask somebody who does not enjoy the biology to teach it as an integrated subject and they said yes it is because your basic schooling was wrong – this is why – I think the actual concept is wonderful – you know very often you find that when teaching in science – I say to the girls you have learnt this in biology – and so when I introduce a concept of science in biology I actually use water as an example and I say when we study water in science we look at the physical properties like how it behaves and so on and biology won't be possible without water – I think it its absolutely vital for them to understand that the two cannot exist without each other

D: so the one aspect you mentioned is about training – that we have been trained in an area – is it possible to integrate biological knowledge and physical science knowledge?

K: yes, definitely – it must be and I think it is essential and I think it is our training that is missing – I don't think it will be integrated successfully in the high school – in the upper level especially – I think in grade 9 it must be integrated

D: in terms of the methods that you use they are so real life and not like traditional school – why do you use these methods

K: I like to involve the girls – I think that they can only find it relevant if they are involved – makes it more interesting for them – makes it more interesting for me and I think you able to look at certain skills – measurement skills, recording, understanding, manipulation of data – you want the girls to get as much at grade 9 level as possible – you want them to be enriched by the science whether they take it or not – they must leave science in grade 9 and understand science in the real world – this is why I prefer them to get in groups and do as many real life things as possible

D: in terms of the topics that you teach are they coming from a core syllabus

K: the national core syllabus and I think we especially controlled by the GETC which we expected to write – so what we are doing is we look at the Matric exam – making sure that those girls who want to take it for Matric have the grounding from grade 9 and then we try and teach them skills – what I am doing in grade 9 is that we teach CASE (Cognitive Acceleration through Scientific Experiment) – we having case lessons that really encourages them to learn skills to know how to do an experiment, to collect the data to record the data

D: CASE is cognitive

K: acceleration through scientific experiment

That CASE lesson is used for doing experimentation in science and Biology and geography and in fact I suppose History – reading something, understanding what they can take out what they can use from it – I believe they are using graphs in history now – its definitely a skill kids have to learn

D: and CASE is done in the ADAPT part

K: yes

D: Do you teach that?

K: yes

D: so you say the topics are taken from the syllabus and there it is outlined – the sequence too is outlined?

K: we get a very general outline – what I can do is actually get you the outline e.g. it says energy it's a lot of understanding of the concept – energy flows – the relationship between energy and the environment – and then we decide the order in which we are going to teach it

Ken: just the integration story – just so that I understand it correctly - if one has science and biology there can be some kind of linking broad connections between concepts or drawing on something from one that illuminates on something from the other- I see that as a very much of a horizontal relationship – there are both legitimate disciplines and we can link and borrow from each other - kind of relationship of equality - in a way in order to illuminate ourselves – whereas with true integration we have a different kind of relationship – more a vertical kind of relationship – you have some kind of an idea or a theme – top here and that's the kind of dominant thing – and the job of these disciplines is to contribute to the concept – the concept is supreme –

K: this is the place we struggle a bit – we are terribly concerned about our own area and that is why we have the adapt programme because we are given – you know in the first half of the year the girls are given a theme the theme might be drama – focused on drama – if they don't choose a science theme in the first half the year they have to choose a science theme in the second half of the year – I know its not the ideal – I know that the concept is to take a theme and then teach the concept – we are doing it the other way around – we teaching the concepts and we encourage them to use the theme

KEN: I just wanted to see if I understood this correctly – in your normal class routines this is the way in which you operate and then in ADAPT there is integration

K: yes – I know that it is not the recommendation

KEN : well that does not mean to say that policy is right – we are not making a value judgement

K I think the big thing is – we have had so many discussions on it – and the big concern is that we don't want to loose the purity of the subject because we actually feel that the actual subject is losing out

Ken : no I don't really understand it – I am actually interested in your use of the word purity somebody called Mary Douglas wrote a book – I don't know if you came across it Devika some time in the 1950s that's why you have not come across it – it was very current at one time – the title of the book was purity and danger – and purity is as you describe it – kind of things kept apart – and danger was

K: I understand I think a lot of us are worried about what is going to happen – we have not thought this through to the end in other words if the subjects are too overlapped – I went to an IEB talk and at the end of it I actually felt I must actually give up teaching now – then I thought that its not such a bad thing – because then we started discussing if the pupils are able to use skills it does not actually matter what knowledge they have – so if you teach them to use skills properly then it does not matter what you ask them to do – you have this idea here – then it does not matter what you ask them to do iow you have this idea here as long as they have the skills pertaining to biology or science then they can take an idea and actually run with it and actually learn as much as they can – but then very often to run with that idea they need basic skills basic knowledge first – and this is what I worry about – if we dilute

skills (knowledge) too much will they then be able to carry out effectively a study further on – so we actually believe there is huge value with integration but we still want to teach the knowledge and the skills because you can't actually do something if you don't know every single basic principle and you have to look it up from scratch – do you know how to do research, do you know how to apply that – and yet using this concept here you are encouraging pupils to go into any situation as long they got the basic skills – reading, extracting data and so on but is it not going to slow the process down – I think we are a little bit concerned about lack of foresight –

D: and also the lack of examples of where it has worked

K : yes and I think our education system is so broad we have such extremes along a scale that what we require – I often wonder if in the private school we are not too set in our ways where we know that our system works – and therefore we are not really prepared to try another system whereas so many Black teachers I have spoken to are wonderful – they are so wonderful in their willingness to give it a try – I must admit I am very much divided in myself - half of me is wanting to say that the old system worked and half is saying that this is a very new and exciting idea but also for a system like this to work you got to have the whole school on board

D: can you think of a way if you have the idea – the theme – from science you pull out like whatever part of the science syllabus relates to the theme and then from biology you also use sections that relate to the theme

K: yes which is what we have done – iow at the end of last year we said to Marilyn Pattendon this is what I will be teaching in the first term – these are the concepts – and then Marilyn put together a group of suggested themes that the girls will then research – many of the girls did not choose science projects - I think it was introduced too early and they did not have a concept of energy, work – the ground aspects were not there – this backs up what I was saying

D: I think the amount of time allocated to adapt will make them feel that it is not as important as the other core subjects

K: I think we have to tell them that it is important because it is going to form part of the GETC and assessment – there are also at this stage where it is not integration yet – because we are focusing on the pure subjects but we going to have to educate them that the skills are important for the GETC that they will do

D: do you think that here at TWC there is going to be a greater move towards more integration

K: yes

D: why?

K: I think because it is GETC driven – there is the exam and I think there has always been a willingness always within the science and biology and within the history and geography to integrate – I think that casually we have been integrating but it is now formalized – certainly in a school like this we are ready and prepared to integrate as much as possible but it is not put down in a table as intent ? (not clear) but the GETC will drive that integration

D: in terms of assessment can you tell us how you assess and what aspects you assess?

K: assessment will be done in you obviously have a test - class work exercises and in your test – I give them tasks where they sit in class and discuss it – there is homework – and certainly when they get onto practicals they will get assessed on practicals skills – class work, homework, test and a research investigation.

D: so its knowledge and skills assessment

K: Yes

D: any values and attitudes at all that you look at?

K: In science we look at the scientific method – it is really important – we need the method clearly thought out, we collection of data at this stage, we need the presentation of the data, we need explanation of what they have found, a lot of very logical thought but then at the end they must be able to verbalise it orally as well as graphically – one area I really struggle with is the dramatic representation in science – I think that they are doing that aspect in drama and English – surely that more than enough – the girls love that and may be we need to encourage and nurture that – our emphasis is on the scientific method and the creativity I mean if you want them to do the investigation they got to learn to be creative – they cannot just do the same thing – we want them to think divergently from a broad spectrum a little more other than what they have been doing in the classroom.

K: can I tell you one major concern I have with the GETC?

D: yes

K: it's a wonderful idea but at the end of the year they are wanting 8 portfolios – in grade 9 its going to take an enormous amount of time – and the girls being girls will not just say this is part of classroom activity or whatever but will put a lot of effort into it – and they are going to be put under a lot of stress –

Another problem with this particular program at TWC – the students are doing double the amount of work in terms pf assessment also – they are assessed normally in tests, assignments and exams for the core subjects and then they are being assed in an integrated way for ADAPT which means a project in term 1 and 3 because there is no exams and developing portfolios for the 8 Las and for ADAPT. If they were just doing integrated LAs then there would be one program of assessment only.

Tape runs out. Some discussion on how the girls are very over worked – there is an incredible strong culture of marks and grades and competition. According to Kate we don't know where this comes from whether it is from home, peers or the teacher – but the girls are very worried about their performance.

APPENDIX C

Interview transcript - Integrated programme co-ordinator

D: I want to know a bit more about adapt – especially why there was a need to bring this new programme in?

M: okay must have been in 2000 Mrs Brown had a vision – the grade 7s in 2000 were the first class that had been OBE orientated and they were going to be the 2005 group and Mrs Brown at the same time was looking for a forward vision for the school – she had also and I think everybody had decided that the entrepreneurship program had been a little overplayed – it had been going on for 10 years – and the school needed to shift direction – keep entrepreneurship going – but shift to have another point to say this is where we are going as well. Mrs Brown was keen to have clear, critical thinkers – this is where her emphasis was lying but at the same time we realized that the grade 7s were going to be grade 8s the next year and we had to do something that would have them prepared for 2005 – at that stage we weren't terribly sure of what was going to happen – the junior school had embraced the OBE fairly well and not terribly much had happened in the high school – there had not been too much preparation of teachers in the high school for the OBE thing and I sort of looked at lots of the teachers and said oh, oh we got problems here because everybody is still in the narrow vision and we actually needed to be 365 degrees – it was not happening – Mrs Brown was keen on the thinking thing and we had lots of workshops – we had the wonderful workshop with John Edwards (Michaelhouse) and he really got me thinking apart from theIn the classroom he opened up many ideas – he concentrated on De Bono's thinking skills and that seemed to be a good place to start because the CORT programme is clearly set out – you can use it as is and it does help children to think laterally rather than vertically and we were all rather taken with the 6 hats idea of using the 6 hats the black hat – the red hat is emotional and the white hat is creative and where you have your ideas set under you can say to everybody right this is the problem we are putting on our red hat and everybody can be as emotional as possible – you don't have to justify a thing and all the ideas the thoughts and emotions you have about the problem can come out and you do it for a set time – I think its usually 4 to 5 minutes and you say okay that it red hats off now we put on the green hats and the green hats are more creative and you now start thinking more creatively – a yellow hat, a white hat, a green hat, red hat, a black hat, a green hat and a blue hat and under all those hats one can direct thinking so get away from the emotional stuff to a more creative way of thinking and to also move everybody off from the well we think we are thinking logically but in fact are we and so we thought that that was a pretty good tool and we had problems from the point of view that we had media studies classes – I was very unhappy with them because the girls didn't see the point of these classes – they didn't see the point of becoming good researchers knowing how to research sufficiently and effectively and without wasting time and learning how to put their key words together and things about how to take reasonable notes. We watched everybody at the photocopying machine – and they were just photocopying all the time instead reading, internalising – and thinking I don't need to photocopy – I just need two or three notes here so I had a problem with that – and then there was not really a problem with computer literacy but that was part of it and we started looking at what OBE requirements were realized it was very much skills based – computer skills went almost top of the list but research skills about becoming

a good researcher were also very important – you don't have to learn all the information these days but you have to know where to find the information and I was very concerned about the fact that the girls thought that the internet was the answer to everything and it is not the answer to everything – sometimes it is sometimes its haywire so I had strong ideas about that – the thinking we felt was giving the children a way a program – getting them away from vertical thinking to lateral creative thinking because that is what is wanted – people want creative thinkers, problem solvers, decision makers and then part of that was counselling as well because living your life involves a lot of problem solving, decision making actually standing up and possibly being the only person not going with the stream – learning how to combat peer pressure – all that sort of thing – so counselling was also put into that program because those things come with practice they are skills you learn to say no without feeling guilty after a while and it takes Russell Crow's perfect example the other night on TV where he was talking about that movie that he just won an Oscar for – someone wanted him to recite a poem and he said no I wont – he just stood there and said no I wont – I thought that is a perfect example of how to say no – so that is also quite popular – we also wanted to include CASE because we felt that CASE has got different methods of thinking for scientific problems – not that I know much about CASE but I have been to a workshop where someone from Hilton College talked about CASE and I got quite excited about it – I thought CASE a wonderful way of changing ones way of thinking – and those are the things that were put together – we decided to leave the core subjects alone because although OBE is supposed to be changing the way in which teacher are teaching we still very much ruled by the Matric exam in the end of their 5 years of high school and so one still has to prepare the children for that exam and one still wants them to get the kind of Matric that will allow them what they wish to do enter tertiary education whatever get the scholarship whatever they want to do so we decided to leave the core subjects alone and last year we ran the adapt program purely as a foundation phase of giving the girls foundation for all these things – I think about it – it is fairly theoretical – it was very boring for them but without foundation you cant build and we have to do the spade work which is often boring and the girls don't always see the end product where they are actually aiming for – I don't know whether it is the right thing to be doing – I don't know if its right that we should be running parallel to the core subjects – I am not sure whether that is the way to go – it works

D: does that worry you?

M: it does because the teachers – you see what worries me a lot is that the teachers are still – they not broadening their outlook – in the grade 8 there is no integration of curriculum there is nothing like that and that's why this parallel thing to me is perhaps not the best – I don't know how we can do it – but it seems to be so restricted – by the year old time table and the number of days and hours one is at school and the fact that in order to ground children in maths they need five maths lessons a week – that in order to make them fairly literate as far as English is concerned they need an English lesson everyday. There goes two of your five period day already – things like geography needs – you need to give the children a good grounding- you need to give them map reading skills, which is very much part of the OBE – what do you do with biology – you got to give them the basics – they cant leap into grade 10 science without learning the basics so its kind of a catch 22 in fact and yet at the same time everything should be working together in order to let these children see the holistic world and not parts so I am not hundred percent sure but right now it is the only way that we can actually get it off the ground and listening to other librarians who talk

about what's happening in their schools – I would actually like to see what's happening at girls high school because – because I heard that they are doing the pygmies – I don't know why but they are all doing the pygmies right now – that's amazing

D: as a theme?

M: as a theme and I would like to see that theme whether the history teachers on board, whether the geography teachers on board, whether the geography teachers on board, whether the arts and culture teacher is on board whether it is languages that we are looking at – I really like to know how they are doing it – because I belong to a group of librarians – we meet once a term to discuss problems and we don't have that many government school librarians joining us its predominantly independent schools and the girls high school librarian is one of the few from that sort of a government school and she was explaining to us – that's very different to what we are doing – and at Epworth – they are also busy with an OBE package – what they have done from what I understand is out of the whole term they have taken one week and that one week is just OBE – I am taking a theme and everybody is on board and working through that theme for the week – and at the end of the week we go back to normal way of doing things – that's what I understood from what she was saying – Michaelhouse is doing something but I have no idea what they are doing and Hilton college is also doing something I have no idea of what they are doing – I would really like to know how other people are doing it – since the seven years I have been in PMB. The librarians have been talking about where we fit into the school – where we are – are we service staff – are we professionals – we are not treated as professionals and we are not part of management at all – librarians – they just hand out books – so we have discussed this many times – we have been to conferences where we have discussed this many times and at a media teachers meeting there was a piece of paper which had the librarians role in the school and I brought it back and said yes we do this, and this and this – and then it said curriculum development and I said we not involved in that at all so I sent it off to my headmistress and said look at this and the next minute I found I was in charge of it – but that to me – I am not attached to any particular subject but I feel I can branch out in any direction – I can listen to anybodies story and just be a facilitator and not worrying about what's going to happen are they going to take history out of the curriculum and you know – we are not going to loose history out of the curriculum ever – its just going to be differently placed – I think anyway and we came to the end of last year and we laid the foundation for the grade 8 now what they are now the first group who will be doing the GETC –but now they are said to be adding something else – and so we sat down – and I didn't have the greatest of briefs – I did not really know what I was supposed to do quite honestly and we had meetings with teachers – we saw some bristling folk around and – we had a huge responsibility to get these children organized – they got to have the skills to do the GETC although we have no idea what skills they know other than the 10 major ones the outcomes – there were 10 major outcomes – we knew we had 8 LAs but that was as about as far as it went so I got everybody to say okay in art what skills do you expect of your children by the end of grade 9 – in history what skills are they supposed to have learnt like using sources – in geography what do expect them to be able to do in map work and model making – we went through all the subjects and everybody gave me a list of what they thought grade 9s should be able to do at the end of the year and I went off to the education media services library and the ladies there helped me find a whack of books and I sat and ploughed through them – looking for the skills that matched all the skills because

there were all these OBE textbooks and teacher handbooks out and I started picking up a pattern and sure enough we ended up with 10 major outcomes – keeping them in mind I then I then tried to work out how we were going to get the girls equipped by the end of the year and decided that the only way we could do it effectively was to have an integrated project of some kind and the idea was to try and get them something that would put two or three learning areas together that we are covering hopefully 3 learning areas – some cover 4 and do that in the first half of the year and then take other projects – more scientifically orientated ones because they have to know the basics to be able to do those projects and do that in the latter part of the year and cover the other four learning areas and I sat and I really sucked these projects out of my thumb but I had a few books – a couple of Australian books that I found very useful that gave me good outlines as far as the subjects are concerned and then ended up with 9 projects which I then submitted very sheepishly to the teachers you know and they all said fantastic lets go with it and then I started to think I am on the right track and then we started getting bits and pieces from the OBE folk and the IEB folk and everything so far and I think that we are not 100% there but we 85% we are on our way – without clear instructions we clear really be sure what we should really be doing right now and so we divide the program – we have a chaplain – the children do have to go for RE – it's a very big thing in this school so you can't sort of weasel out of it – he has all the criteria and he knows what everybody is doing and he tries where he can to sort of fit it but it is still very much a religious education thing that he is doing – counselling they were involved in study techniques, note taking techniques, time management, how to get on in a small group with people you don't really get on with how to be a responsible group member and so counselling has been involved again – certainly this first term making sure that these little groups are working are actually working well together – that if there are problems, how do you work through the problems – we have research skills – girls come to the library and do research for their projects – and they have gone to counselling for time management – they have been going to the computer room for computer skills and I am really looking forward to the presentations – and I am very excited – things are happening out there – and they have been going to CASE – they have been doing more advanced CASE to sort of get them ready for problem-solving – and that's really I mean out of the two week cycle we have 4 lessons – that is about as much as one can do – I don't think its enough time – the project has gone on the whole term and I have to confess I have been very pleasantly surprised at what's been happening – even with the groups that are not madly motivated they have been doing fine – better than if maths or somebody had given them a project to do they leave that project for the last minute – this project they try to fit it in – we try to be helpful and organized and tell the girls that at this particular stage we would like to see that you have gone this far and so on – two or three weeks down the line we like to see that you got this far – and so where are you now – just to make sure that they are not all sitting there reading the question and not understanding and trying to encourage all forms of thinking and problem-solving and decision making and getting on in their groups and researching efficiently – sure they really are using the right kind of key words and we were a bit prescriptive in that we said internet use is restricted – one source only must be related to the internet because we wanted to know that they really knew how to do research – its not all internet related – do you know how to find information out of journals – do you know how to find information out of reference books do you know how to get your information out of newspapers because using the internet – use the wrong key words and you will get a million hits use the right key words and you might get a hundred so I think

watching them from the outside I would say its working but the proof of the pudding is going to be in the presentation – I have no ideas what these presentations are going to be – I can only work out – I have twin girls in grade 9 and I am watching what they are doing and I can actually latch onto what they are doing and the problems they are having much more easily – simply because my ears are open – and their friends come round to the house to do things – they made a volcano – I saw what problems they had – I watched them – they did not have the foggiest idea what to do – they had this chicken wire and they had a pair of pliers and they did not know what to do – they were going to make this thing out of wet sand – they sort of moulded this thing out of wet sand – and somebody said well what happens when the sand dries – I said hooray – there’s one sort of problem, now solve the problem and eventually they decided to put the chicken wire over the wet sand – they did not know what to do – it was fascinating to watch that they did not know what to do and so they learnt to use drills and all the technology things the technology teacher is following the OBE syllabus to the letter because the girls have not had much technology and he is trying to make sure they catch up – so they have drilled and then hammered and they have done various things – they have made pentagons and rectangles – glued things and screwed and used nuts and bolts and whatever – I have been able to watch them and see the problems that have arisen with my girls – nobody came and said oh poor me I am having a terrible time – nobody has actually admitted to it and they seem to be handling things very well and being very creative which to me is very important – I am hoping that we will get exciting stuff use of materials to produce something very exciting –

D: in terms of what ADAPT stands for – Mrs B mentioned it once but I did not write it down –

M: I will go and get it for you – I have a habit of putting things away so safely that I cant find them – I’ll get a copy for you – things like adjust, development of self, adaptability, personal growth, team-work – I might have one of those As incorrect – being able to adapt from one way of thinking to another way of thinking – I have it written down –

D: do you think the next year grade 9 will follow the same program or will it be adjusted?

M: actually I don’t have an idea – we have to assess how this one works and whatever the problems are with this one we have to work with them and sort them out – if there are problem areas then adjust them and adapt them – our grade 8s are following very much the same program our grade 8s followed last year in fact mainly because you are building that foundation – they cant change too much – like everything – if you learn how to sew you have to know what tacking stitches before you can sew and get on with something else – the grade 8s this year – they following pretty much the same thing in the adapt but there is another program called HAT and this has home economics, art and technology – so its another skills based program – they have gone through things like safety in the kitchen don’t have pot handles sticking out from the end of the stove, don’t put off your main switch, some of the girls don’t know how to use a hot cloth and get things out of the oven and now they are doing the basic kind of food preparation and they have made scones

APPENDIX D

E.g. subject specific assessment - Geography

Concept	Level 1	Level 2	Level 3	Level 4	Score
Description of disaster	Understanding terminology	Using appropriate terminology	Terminology, ideas presented in clear and logical way, using statistics, examples	Showing personal insight by adding own comments	
Warning systems and prediction * Early warning * Prediction * Measurement of the intensity	Understanding the difference between early warning and prediction	Able to list the early warning procedures that relate to prediction	Showing how the warning systems, prediction and monitoring can interrelate	Suggesting how other factors affect systems such as these and thus their importance. Suggest the impact these systems may have on top-level reactions e.g. gov. response for emergency.	
Understanding of process • Why • How • What	Able to show there is a sequence of events taking place.	Ordering the sequence correctly	Explaining the sequence at each stage	Expanding on the ideas contained in the process e.g. using specific examples and pointing out anomalies	
Evaluation of impact on people – those: *Affected *Assisting	Shows basic understanding of the way in which people are affected	Able to distinguish between those affected and those assisting	Expanding understanding of the role of civil defence units in the response to natural disasters	Grouping information and making extended connections and identifying aid givers roles	
Account of devastation on	Able to describe the	Able to make	Showing the extent of	Suggest how the extent of	

the environment • Before • After	two scenes	comparisons between the two scenes and account for differences	devastation on the environment and the short term effects	devastation may have an impact on the long-term situation	
Portrayal using geographic tools-visual skills – model, video, live, diagrams, slides, OHP, etc.	Able to relate a visual representation to reality	Transferring information from a visual form to another source e.g. news report	Construct a simple visual resource from information gained	Apply a similar representation to another situation	

E.g. Teacher-based assessment of entire presentation

Comment	Level 1	Level2	Level 3	Level 4
1. Have the learners demonstrated an understanding of what the project required of them. Is it well planned and organised	The learners did not present their information in a logical sequence. They showed little understanding of what was required by the project. Planning not obvious.	The audience had difficulty in following the presentation because the ideas jumped around and did not always follow a logical sequence. Not well planned.	The learners presented their material in a logical sequence which illustrated their understanding of what the project required and a good degree of planning.	The learners presented their project in a logical, well planned, interesting and stimulating manner which was easy to follow. A high level of understanding of what was required has been demonstrated.
2. Did the presentation show a high level of team work?	No. The team appears to have had difficulty in working together.	Not always. It was obvious that some members had done more work than others.	This team appears to have worked well together in a co-operative manner.	This team seems to have worked extremely well together in a co-operative, caring, respectful and responsible manner.
3. Did the project appear to be well researched?	No, the information was very scant.	Some areas seem to have been better researched than others.	The information was good and of an acceptable depth.	The information level was very high and had obviously been researched in

				great depth.
4. Did the group make use of graphics?	No, or the graphics that were used were irrelevant.	The learners occasionally used graphics that did not always support the text and presentation	The learners used relevant graphics to support their text and presentation.	The learner's graphics were highly and were used to explain or reinforce their text and presentation.
5. Did the group demonstrate creativity and initiative?	No.	There were occasional sparks.	The group's presentation showed obvious signs of initiative and creativity.	The presentation was superbly creative and demonstrated a high degree of initiative.
6. Have the information sources been acknowledged in a full bibliography?	No, and/or a partial bibliography offered, incorrectly and inaccurately set out, and/or to many Internet sources.	Bibliography offered, but items not accurately described and/or Internet limitations ignored.	A good bibliography offered, which has taken into account the Internet limitations. A few inaccuracies.	A model bibliography offered taking into account all instructions – correctly and accurately set out.

An example of self-assessment

Comment	Level 1	Level 2	Level 3	Level 4
1. Did you understand what was required for this project?	It was very difficult and I needed a lot of help from the teachers and group members.	It was difficult and I had to ask the teacher for an explanation.	I read the instructions a few times before I was clear on what was needed.	I had no difficulty in understanding what was needed.
2. Did you find researching this project difficult?	It was very difficult and I battled to find any information. I had to ask for a lot of help from the teacher.	It was difficult, but I identified what I thought was needed and checked it out with the teacher.	I identified what was needed and found the information by following logical steps.	I had no trouble finding information for this project.
3. Did you find keeping a diary and organizing your time difficult?	I found it very difficult and had to ask for a lot of help from the teachers.	It was difficult at first, but the teachers guided me and it became easier.	It wasn't difficult, but it was hard to stick to the deadlines set.	I had no difficulty in organizing my time and diary
4. Did you finish the project by the due date?	No, I was still working on the project this morning.	No, but it was finished before the holidays.	Not completely, due to AV equipment problems.	Yes, the project was ready to hand in on the due date.
5. How would you rate your team?	We did not work well together and spent a lot of time arguing about whose ideas we would use. Some members did very little work.	We got on most of the time, but some members didn't pull their weight.	Our team worked well together with an equal division of labour, ideas and responsibility.	Our team worked very well together. We shared, helped, listened to ideas, respected the opinions of others and found the experience rewarding.
6. Did you use AV equipment?	Didn't use it at all and didn't know how to include it in the project.	Didn't use it but would have liked to if I'd known how to use the equipment.	Used some basic AV equipment that wasn't too difficult to use.	Used AV extensively as an integral part of the presentation.
7. Did you enjoy this project?	No, it was boring.	Some parts were nice, other parts were awful.	The project was interesting but it went on for too long.	The project was challenging, exciting and very stimulating. I

				loved it.
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An example of peer assessment

Comment	Level 1	Level 2	Level 3	Level 4
1. What was the impact of the project as a whole?	It was awful, very badly prepared.	Some parts were interesting, others boring.	It was pretty good and I enjoyed it.	Stunning.
2. Did you feel the project was well researched?	No, some of the information sounded as if it was made up.	It sounded as if the subject was skimmed over. There wasn't enough depth.	There was a lot of good material, and some of the illustrations were excellent.	This project was obviously well researched, the illustrations were stunning, and the information presented with confidence.
3. Did the group make good use of computer and/or audio-visual technology?	There wasn't any, or what was used did not add to the impact of the presentation.	There was some use of technology, but it did not always support the points being made by the presentation.	The group used a lot of technology which formed an integral part of the presentation.	The group's use of technology was stunning, appropriate and totally relevant to the presentation.
4. Did you learn anything from this presentation?	No.	There were one or two facts I didn't know already.	There was a lot of interesting information.	There was so much fascinating information I couldn't take it all in.

APPENDIX E

Samples of learner support materials collected.

TWENTY

Something like sixty per cent of all books borrowed in many English public libraries are mystery stories and yet they are always reviewed by themselves, kept quite apart from orthodox fiction. This is an indication that the Mystery is different.

To my mind the one really extraordinary thing about it is that it is conventional to the point of being rigid, in an age when every other kind of writing tends to be without prescribed form. It is not that changes have never been attempted but, although the pattern has softened, no radical alteration has yet occurred. The Mystery remains box-shaped, at once a prison and a refuge. Its four walls are, roughly, a Killing, a Mystery, an Enquiry and a Conclusion with an Element of Satisfaction in it.

To please the majority each of these items must be balanced, at least factually convincing and, if possible, new. This is an exacting specification. Both writers and readers are relentlessly precise and when moralists cite the modern murder mystery as evidence of an unnatural love of violence in a decadent age, I wonder if it is nothing of the sort, but rather a sign of a popular instinct for order and form in a period of sudden and chaotic change. The essential killing is, at worst, no more than a status symbol, an indication that the theme in hand is of importance. But there is, also, something deeply healthy in the implication that to deprive a human being of his life is not only the most dreadful thing one can do to him but also that it matters to the rest of us.

From the author's point of view, one of the more deceptive aspects of the Mystery is that it appears so easy to do and I suspect that I was particularly fortunate inasmuch as that was practically the only mistake I did not make. I had never found any writing easy. What attracted me most of all was the protective covering offered to the author. Nobody blamed the Mystery writer for being no better than himself. If he got his facts wrong the readers wrote and abused him but no one, not even in the literary columns, ever wrote to analyse his twisted ego or to sneer at his unformed philosophy. Nobody cared what the Mystery writer *thought* as long as he did his work and told his story. It suited me. The only definite thing I had to tell the world was that I liked it even if no one else did. The box seemed most inviting.

No () lays the shape of the Mystery is much more flexible although the four walls remain. It has become the Folk Literature of the twentieth century and is, in a way, a modern version of the Morality plays of the Middle Ages. Historians tell us that the Moralities, those crude but popular pantomimes of personified Vice and Virtue which were performed upon open wagons in the market places, are only of interest since they served to link the Miracle Plays, which were frankly religious, with the later secular Theatre. But I should have thought they might have had a humble little purpose of their own.

As does the modern Mystery, they stated an elementary theory of Right or Wrong, Growing or Dying, in a cheerful, popular way, to a generation of ordinary people who were exposed to a great new flood of contradictory beliefs, cynical theories and some of the most demoralizing hazards civilized humanity has ever experienced. The Bomb is hard to live with; so, no doubt, was the Plague.

Nowadays, the Mystery goes everywhere. The same sagas appear, almost simultaneously, in every language, in every country. The main message is still the same, simple and on the side of the Angels: 'It is not good to die; any violent death is the concern of the Community'.

Minor messages vary as do the writers and some of these may have been hampered by the formality of the medium, but for the rest, and I count myself among these, the Mystery is an art form whose discipline has been beneficial and which has always kept us free in our very unimportance. We have the privilege of Court Fools. There is very little we dare not say in any company in any land. Nobody honours us more for blurting out the truth if it occurs to us. But then, nobody stops us.

MARJORIE ALLINGHAM, *The Mysterious Mr Campion*

1 Instead of 'mystery stories' (line 2), the writer might have used all the following terms EXCEPT

- A thrillers
- B ghost stories
- C murder stories
- D detective stories

2 The phrase 'kept quite apart from orthodox fiction' (line 3) refers to the fact that mystery stories and other novels are

- A put on different shelves in the library
- B borrowed by different types of reader
- C treated separately by literary critics
- D listed separately in book catalogues

2 AFTER THE FIRST WORLD WAR

At the end of the First World War the winning powers met at Versailles near Paris to draw up a peace treaty. They wanted to make sure that a world war would never happen again and so tried to get rid of all the factors that had led to the First World War. The map of Europe was redrawn, so that the smaller countries were given the right to govern themselves. This was the recognition of the *right of national self-determination*, that is, that each group of people with a common language, identity and culture should have the right to become a separate and independent nation. As a result, new countries like Czechoslovakia, Hungary and Yugoslavia came into being. An independent Poland was also created. The peacemakers also agreed to establish a League of Nations which would try to maintain peace in the world.

Treaty of Versailles

The Allied powers blamed Germany for starting the First World War, and so they decided:

- to punish Germany harshly and to force it to accept blame for causing the First World War; and
- to reduce Germany's power so that it could not threaten world peace again.

Germany's punishment

- War Guilt

Germany had to accept the blame for starting the First World War and had to pay enormous amounts of money (reparations) to its enemies for the damage caused by the war.
- Land that was lost

Germany lost all its African and Asian colonies. More seriously, Germany lost part of its land in Europe (see map). The most important losses were the Sudetenland to Czechoslovakia and the Polish Corridor to Poland. This meant that four million Germans were placed under foreign rule. Germany was also forbidden to unite with german-speaking Austria.



The land that Germany lost

So Germany's rights of national self-determination were ignored. Also, the lost territories contained fifteen per cent of Germany's agricultural land and ten per cent of Germany's industry.

- Military terms

The German army could not have more than a hundred thousand soldiers, and its navy could not have more than six battleships. Germany was not allowed to have an airforce or submarines.

Germany was not allowed to discuss the terms of the treaty and was forced to sign. The Germans therefore regarded the Treaty of Versailles as a *diktat* - a dictated treaty. The treaty made the Germans very angry and humiliated and many wanted revenge.

Did the treaty of Versailles really crush Germany?

The Germans reacted emotionally to the Treaty of Versailles and wanted revenge because they were crushed as a world power. But was Germany really destroyed as a major power? Let us examine the evidence.

- Germany did lose a lot of land and resources in the Treaty.

But none of Germany's industry and agriculture had been destroyed by the fighting in the war. And by 1924 the German economy had recovered so that Germany was once again the richest country in Europe.
- The German army and armaments were restricted by the Treaty.

However, the hundred thousand men who stayed in the army were very well trained and highly organised. Germany did begin to re-arm and develop new weapons in secret.

As a result of the peace treaties, Germany had small, weak nations which could be easily crushed to the south and to the east.

Something for you to do



1. Look carefully at the map and make a list of all the territory that Germany lost in Europe after the First World War.
2. Which of these areas do you think Germany wanted to get back most? Write these down and give reasons for your answers.



3. The peacemakers at Versailles aimed to destroy Germany as a world power. Did they succeed? Back up your answer.



Treat others with honour even if it hurts - because its contagious.