

**THE ADAPTIVE DEVELOPMENT AND USE OF
LEARNING SUPPORT MATERIALS IN RESPONSE
TO THE 1ST PRINCIPLE OF THE REVISED
NATIONAL CURRICULUM STATEMENT: THE CASE
OF HADEDA ISLAND.**

**A thesis submitted in partial fulfilment of the
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ABSTRACT

This case study describes the development and trial use of the *Hadedea Island Big Book*. Developed within a transforming South African curriculum framework, the study recognises that current educational practices are shaped and steered by historical, cultural, political and economic realities. This perspective guides the research design, which considers each of the three participating schools as contextually unique.

The *Hadedea Island Big Book* was developed in response to the 1st Principle of the Revised National Curriculum Statement (RNCS). This calls for all curriculum activities to develop learners' understandings of the relationship between social justice, a healthy environment, human rights and inclusivity. The study probes ways in which learning support materials might respond in line with the vision of the RNCS 1st Principle.

Associated challenges, tensions and opportunities are discussed in relation to schools' interactions with the *Hadedea Island Big Book*. The diverse and creative responses to the book lead this study to foreground generative approaches to curriculum work. Emphasis is thus redirected from hierarchical, stipulative views of curriculum to more dynamic, responsive views of curriculum as a guiding framework. This is regarded as a valuable orientation to the development of future learning support materials.

The study comments on the challenge of supporting teachers to develop curriculum activities that reflect a view of 'environment' as socially shaped and multi-dimensional. Tendencies to focus on either the 'ecological' or the 'social' dimensions of environmental issues rather than on the interacting socio-ecological dimensions are recognised as limiting the material's potential to strengthen environmental learning in schools. The study recommends that greater attention be paid to the environmentally-oriented Learning Outcomes and Assessment Standards of all Learning Areas in the RNCS. In so doing, socio-ecological learning processes may be strengthened through curriculum work.

DEDICATION

*To Mom and Dad, who were there for the start,
but couldn't make the finish.*

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Countless others have helped, in some way or another, to shape the *Hadedea Island* materials. Practitioners in environmental education have enriched this project by sharing their opinions and experiences of materials development; teachers and SADC-REEP course participants have engaged with interest and enthusiasm with *Hadedea Island*; and other researchers' work has helped to inform the process.



TABLE OF CONTENTS

DECLARATION	i.
ABSTRACT	ii.
DEDICATION	iii.
ACKNOWLEDGEMENTS	iv.
TABLE OF CONTENTS	v.
FIGURES, TABLES & APPENDICES	
ABBREVIATIONS	
CHAPTER ONE:	
<i>A BIRD'S EYE VIEW: INTRODUCTION</i>	
1.1 BEGINNING THE PROCESS	1
1.2 SHARE-NET AS A CONTEXT FOR MATERIALS DEVELOPMENT	2
1.3 FROM <i>COCKATOO ISLAND</i> TO <i>HADEDA ISLAND</i>	3
1.4 RESEARCH QUESTION AND GOALS OF THIS STUDY	5
1.5 THE LANGUAGE OF CURRICULUM TRANSITION	5
1.6 THE CONTENTS AND STRUCTURE OF THIS REPORT	6
1.7 A NOTE TO THE READER	7
CHAPTER TWO:	
<i>HABITATS: A COMPLEX SOCIAL LANDSCAPE OF TEACHING AND LEARNING</i>	
2.1 INTRODUCTION	8
2.2 A SOCIAL EPISTEMOLOGY AS A LENS FOR THIS STUDY	8
2.3 SOCIO-POLITICAL TRANSFORMATION IN SOUTH AFRICA	9
2.4 EDUCATIONAL TRANSFORMATION IN SOUTH AFRICA	11
2.4.1 Education as an agent of change	11
2.4.2 From segregation to transformative education	12
2.5 ENVIRONMENTAL EDUCATION PROCESSES IN SOUTH AFRICA: AN HISTORICAL PERSPECTIVE	13
2.5.1 Introduction	13
2.5.2 Earlier conservation-orientated approaches to environmental education	14
2.5.3 Trends and influences shaping South African environmental education processes	14

2.5.3.1	The EEPI and EECI	14
2.5.3.2	The Learning for Sustainability project	15
2.5.3.3	The NEEP-GET pilot research	16
2.5.3.4	Conclusion	17
2.6	THE EMERGENCE OF OUTCOMES-BASED EDUCATION AND CURRICULUM 2005	18
2.6.1	Background	18
2.6.2	OBE: a contested framework for education	18
2.6.3	An overview of the design and implementation of C2005	19
2.7	ENVIRONMENT IN C2005	20
2.8	ORIENTATIONS TO CURRICULUM	22
2.8.1	Curriculum policy as something to be operationalised	22
2.8.2	Curriculum as a generative guiding framework	24
2.8.3	Curriculum ambivalence in South African settings	25
2.8.4	Strengthening curriculum interactions	25
2.9	CHALLENGING REALITIES OF CLASSROOM PRACTICE AND BARRIERS TO CURRICULUM TRANSFORMATION	26
2.9.1	Introduction	26
2.9.2	Lingering constraints of ideology	26
2.9.3	Access to resources is not enough	27
2.9.4	Teachers grapple with the implications of C2005	27
2.10	THE ROLE OF LEARNING SUPPORT MATERIALS IN C2005	28
2.10.1	Introduction	28
2.10.2	What is meant by 'learning support materials'?	29
2.10.3	Learning support materials in curriculum settings	30
2.11	THE STREAMLINING OF C2005 AND THE INTRODUCTION OF THE RNCS	31
2.12	ENVIRONMENT AND THE RNCS	33
2.13	CONCLUSIONS	34

CHAPTER THREE:

FLIGHT FORMATION: RESEARCH DESIGN DECISIONS

3.1	RESEARCH THAT IS SOCIALLY SHAPED AND SHAPING	35
3.2	THE RESEARCH PROCESS	35
3.2.1	An overview	35
3.2.2	School-based interactions	38

3.3	THE USE OF CASE STUDIES	40
3.4	METHODS OF GENERATING INFORMATION	41
3.4.1	Introduction	41
3.4.2	Record-keeping and reflective journal	42
3.4.3	Annotated photographs	43
3.4.4	Videoed lesson extracts	44
3.4.5	Teachers' profiles, supplementary questionnaires and lesson planning	45
3.4.6	Portfolio of learners' work	46
3.4.7	Reporting templates	46
3.4.8	Semi-structured interviews	46
3.5	CONSTRUCTING A FABRIC FROM EMERGING TRENDS	47
3.5.1	First layer of interpretation	47
3.5.2	Second layer of interpretation	48
3.6	AUTHENTICITY, INTEGRITY AND RIGOUR	49
3.7	ETHICAL CONSIDERATIONS	50
3.8	CONCLUSION	51

CHAPTER FOUR:

COURTSHIP: PHASE ONE'S EARLY DEVELOPMENT AND PILOTING OF THE HADEDA ISLAND BIG BOOK

4.1	INTRODUCTION	52
4.2	SHARE-NET-BASED DEVELOPMENT PRIOR TO PILOTING THE DRAFT MATERIALS	52
4.2.1	Early planning and conceptual clarification	52
4.2.2	Shaping the written text	53
4.3	THE CONTEXT OF EPWORTH PRIMARY SCHOOL	54
4.3.1	The school's ethos and socio-economic background	54
4.3.2	Participants in the pilot phase: two teachers and their classes	55
4.3.3	A progressive educational approach	56
4.3.4	Environmental learning in the school	57
4.4	TEACHERS PLAN AND IMPLEMENT A LEARNING PROGRAMME	58
4.4.1	Early teacher-researcher interactions and planning	58

4.4.2	Sequencing and content of classroom-based work using the <i>Hadedda Island Big Book</i>	61
4.4.3	Curriculum links and assessment	67
4.5	REFLECTIONS AFTER THE PILOT PHASE OF THE <i>HADEDA ISLAND BIG BOOK</i>	69
4.6	REFLECTIONS TO GUIDE PHASE TWO OF THE DEVELOPMENT PROCESS	70

CHAPTER FIVE:

***NESTING: THE TRIAL PHASE WITH NOGQAZA PRIMARY SCHOOL
AND HOWICK PREPARATORY SCHOOL***

5.1	INTRODUCTION	71
5.2	THE CONTEXT OF HOWICK PREPARATORY SCHOOL	71
	5.2.1 The school's ethos and socio-economic background	71
	5.2.2 Participants in the trial phase : two teachers and their classes	72
	5.2.3 Environmental learning in the school	73
5.3	EARLY INTERACTIONS	74
5.4	TEACHERS OF HOWICK PREPARATORY SCHOOL PLAN AND USE A LEARNING PROGRAMME	77
5.5	TEACHERS OF HOWICK PREPARATORY SCHOOL REFLECT ON THEIR USE OF THE <i>HADEDA ISLAND</i> MATERIALS	81
	5.5.1 An overall impression of the materials	81
	5.5.2 Assessment of learners	81
	5.5.3 Recommendations for further development and use	82
5.6	THE CONTEXT OF NOGQAZA PRIMARY SCHOOL	82
5.7	EARLY INTERACTIONS	84
5.8	TEACHERS OF NOGQAZA PRIMARY SCHOOL PLAN AND USE A LEARNING PROGRAMME	85
	5.8.1 Planning the classroom activities	85
	5.8.2 Teachers apply their planning to classroom activities	86
	5.8.3 Accompanying learning support materials	89
	5.8.4 Curriculum links	90
	5.8.5 Assessment opportunities	92
	5.8.6 Teachers reflections on using the <i>Hadedda Island Big Book</i>	92

CHAPTER SIX:

HATCHLINGS: RESEARCH FINDINGS

6.1	INTRODUCTION	94
6.2	HISTORICALLY FORMED PATTERNS SHAPE CURRENT PRACTICES	94
6.2.1	Context underpins practice	94
6.2.2	Current context is historically situated	94
6.2.3	Varying frames of reference	96
6.2.4	School ethos and management	97
6.3	CURRICULUM CHALLENGES AND OPPORTUNITIES	98
6.3.1	Working with teachers in a changing curriculum	98
6.3.2	Curriculum experiences that articulate with the RNCS 1 st Principle	101
6.3.3	Links to Learning Areas and Learning Outcomes	104
6.3.4	Assessment	106
6.4	THE MATERIAL'S DESIGN SHAPES ITS USE	107
6.4.1	Design in relation to the RNCS 1 st Principle	107
6.4.2	A metaphorical narrative	107
6.4.3	Multiple texts, multiple narratives	108
6.5	OPEN-ENDED OPPORTUNITIES	111

CHAPTER SEVEN :

FLEDGLING FLIGHT : CONCLUSION AND RECOMMENDATIONS

7.1	EMERGING CLARITY	112
7.2	GENERATIVE ORIENTATIONS TO CURRICULUM	112
7.3	RECOMMENDATIONS	114
7.4	OPPORTUNITIES FOR FURTHER RESEARCH	116
7.5	TOWARDS GENERATIVE CONCLUSIONS	117

REFERENCES :	121
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FIGURES, TABLES AND APPENDICES

Figure		Page
Figure 1.1	Cockatoo Island promotional flyer	1
Figure 3.1	Multiple cases of this study	40
Figure 4.1	Epworth School front entrance	54
Figure 4.2	Interior of Mrs Oftebro's Grade 4 classroom	55
Figure 4.3	Learners paintings of wetland scenes	62
Figure 4.4	Learners read from the <i>Hadedea Island Big Book</i> : Epworth School	63
Figure 4.5	Cover designs for learners personalised A4 copies of the <i>Hadedea Island Big Book</i>	63
Figure 4.6	Epworth School election campaign posters	66
Figure 4.7	Epworth learners queue to vote	66
Figure 4.8	Building bird feeders for the Epworth School garden	66
Figure 4.9	Theatrical bird masks	69
Figure 4.10	Epworth School's Hadedea Island Assembly	69
Figure 5.1	Howick Preparatory School entrance and building	72
Figure 5.2	A linear approach to using the <i>Hadedea Island Big Book</i>	75
Figure 5.3	An integrated approach to using the <i>Hadedea Island Big Book</i>	76
Figure 5.4	Interior of Mrs Bulcock's classroom	77
Figure 5.5	Learner work in A3 workbooks	78
Figure 5.6	A learner making his 'ID book'	79
Figure 5.7	Mrs Bulcock talks about environmental responsibility	80
Figure 5.8	Nogqaza Primary School main entrance	83
Figure 5.9	Mrs Ntshingila writes on the board	87
Figure 5.10	Mrs Taylor teaches with the <i>Hadedea Island Big Book</i>	87
Figure 5.11	Learners use a field guide	90
Figure 5.12	Whole class reading at Nogqaza Primary School	91
Figure 5.13	Learners imitate birds flight	91
Figure 5.14	Learners sing like Hadedas	91
Figure 5.15	A learner reads from the <i>Hadedea Island Big Book</i>	91
Figure 6.1	Sub-narratives of the artwork	109
Figure 6.2	Analysis of the <i>Hadedea Island Big Book's</i> written text	109

Table

Table 3.1	Summary of the phases of research in the study	37
Table 3.2	Codes used in the study and their explanations	39

Appendix

Appendix A	Draft version of the <i>Hadedda Island Big Book</i> (scaled-down from A3 to A4) as used in phase three of this study
Appendix B	Samples of draft pages from the Australian Cockatoo Island Big Book
Appendix C	Principles of the Revised National Curriculum Statement (RNCS). Department of Education 2002
Appendix D	Share-net promotional flyer
Appendix E	Share-net order form / price list (October 2003)
Appendix F	Summary of terminology in a transforming curriculum, selected according to terms used in this study
Appendix G	School, community, teacher and classroom profile
Appendix H	Template for reporting on use of <i>Hadedda Island</i>
Appendix I	Extracts from reflective journals
Appendix J	Supplementary questionnaire (SQ) given to the teachers at Howick Preparatory School
Appendix K	Samples of learner's work from Epworth Primary School during Phase Two
Appendix L	Samples of learner's work from Howick Preparatory School during Phase Three
Appendix M	Samples of learner's work from Nogqaza Primary School during Phase Three
Appendix N	Extract from interview transcript : Nogqaza Primary School
Appendix O	Interview schedule : Howick Preparatory School
Appendix P	Letter of permission from the KwaZulu-Natal Education Department
Appendix Q	Summary of first meeting towards the development of the <i>Hadedda Island Big Book</i>
Appendix R	A selection of teachers notes and learners' work produced during Epworth School's focus on the <i>Hadedda Island Big Book</i>
Appendix S	Epworth School's worksheets on democracy and human rights, prior to commencing work with the <i>Hadedda Island Big Book</i>
Appendix T	A light-hearted report on Epworth School's Bird Election Day

Appendix U	Wetland scenario
Appendix V	Play script used in Epworth School's Hadedda Island assembly
Appendix W	Guiding mindmap for teachers
Appendix X	Department of Education Learning Programme Unit programme template
Appendix Y	Summary of classroom activities showing with which learning areas and learning outcomes these corresponded
Appendix Z	Tabulated teacher guide developed for Nogqaza Primary School

ABBREVIATIONS

C2005	Curriculum 2005
DoE	Department of Education
EEASA	Environmental Education Association of Southern Africa
EECI	Environmental Education Curriculum Initiative
EESI	Environmental Education Policy Initiative
LSM	learning support material
N EEP-GET	National Environmental Education Programme
NEEP-GET	National Environmental Education Programme – General Education and Training Band
OBE	Outcomes-based education
PEI	President's Education Initiative
RNCS	Revised National Curriculum Statement
RUEEU	Rhodes University Environmental Education Unit
SADC-REEP	Southern African Development Community – Regional Environmental Education Programme
WESSA	Wildlife and Environment Society of South Africa

Chapter One

Introduction: A Bird's Eye View



*Education is meant to change people, as
is research; not through colonizing their
consciousness but by bringing them to a
place where they can go on to make up
their own stories.*

Paul Hart, 2002

1.1 BEGINNING THE PROCESS

In July 2002, Professor Rob O'Donoghue of the Rhodes University Environmental Education Unit (RUEEU) returned from the Australian Association of Environmental Education Conference in Australia with an outline of *Cockatoo Island* – a materials development initiative undertaken by Ali Garnett of the Australian Parliamentary Office. The series of three Big Books, collectively known as *Cockatoo Island*, was in the final stages of development to guide young children in learning about democracy and Australian parliamentary structures (see Figure 1.1 below and Appendix B). Children enter the fantasy world of *Cockatoo Island* through role play activities, stories, songs and games to form a 'Parliament of Birds' to make decisions about how to live together on the island and respond to arising challenges. Garnett sent draft materials of *Cockatoo Island* to the RUEEU as a basis to investigate similar ideas in a South African environment and curriculum context.



Figure 1.1 The one-page promotional flyer of *Cockatoo Island*, developed by the Australian Parliamentary Office during 2001/2002. This and other illustrative pages (see Appendix B) were sent to the RUEEU as guiding inspiration to develop a similar South African resource.

The study I present in this report arose from discussions between O'Donoghue, Lotz-Sisitka (also of the RUEEU) and me around the potential for the adaptive redevelopment of *Cockatoo Island* for use in South African schools, especially in the context of the recently revised National Curriculum Statement (RNCS) for Grades R-9. The First Principle of the RNCS (DoE, 2002:10) states that:

The curriculum can play a vital role in creating awareness of the relationship between human rights, a healthy environment, social justice and inclusivity.

See Appendix C for the full RNCS Principle Statement in which this extract lies, and Sections 2.11 and 2.12 for discussion on this principle's implications for curriculum practices.

In late 2002, colleagues and I (representing Share-Net and the RUEEU) posed the following question in response to our readings of the RNCS 1st Principle:

How might learning support materials such as Cockatoo Island stimulate teaching and learning activities that articulate with the RNCS 1st Principle?

It seemed appropriate and advantageous that the emerging opportunity to conduct curriculum-focused research into the adaptation, development and use of *Hadeda Island* (as the materials came to be called) be situated within Share-Net, a collaborative materials development project described below in Section 1.2. As the site within and from which this study arose, Share-Net could benefit from and contribute to research activities exploring the interface between learning support materials and the RNCS.

1.2 SHARE-NET AS A CONTEXT FOR MATERIALS DEVELOPMENT

Share-Net operates as an informal environmental education support project within the SADC region, working in particular with schools, tertiary institutions, environmental education centres and the SADC Regional Environmental Education Programme (REEP)¹. Over and above its networking role, Share-Net also provides informal support to educators and environmental education service providers in the form of collaborative materials development and the provision of low-cost, adaptable learning support materials (see Appendices D and E).

Established during the 1980s as a collaborative partnership between (principally) the former Natal Parks Board, the Wildlife and Environment Society of South Africa (WESSA) and WWF-SA, Share-Net stimulated the development of low-cost booklets to support fieldwork and basic ecology studies (O'Donoghue, 1990; Taylor, 1997). By 2002, the project had grown to include a wider range of environmentally focused educational materials including themed teacher guides, booklets and packs to promote environmental action-taking (Taylor & Janse van Rensburg, 2002) (see Appendix E). All materials are printed on site at the Umgeni Valley Project, Howick on a print-on-demand basis and distributed mainly through a cost-recovery mail order service (Taylor, 1997).

In early 2002, reflections on the development and dissemination of materials through Share-Net had stimulated a small-scale study of the extent to which the project's original valuing of "... contextual responsiveness, social relevance and curriculum validity" (Olvitt, 2002:26) was sustained in current

¹ The Southern African Development Community (SADC) has fourteen member states: Angola, Botswana, Democratic Republic of Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe. The SADC Regional EE Programme (REEP) was established in 1993 with the objective of enabling EE practitioners to "...strengthen environmental education processes for equitable and sustainable environmental management choices ... achieved through enhanced and strengthened environmental education policy, networking, resource materials and training capacity" (SADC, 2002:14)

practices. Early findings suggested that "...the project's interaction with schools ... appears to be a function of *supplying* rather than offering direct support [of the materials into use]" (*ibid.*).

From such findings arose further questions about Share-Net's responsive interaction with SADC-REEP activities, national curriculum frameworks and key role-players such as the National Environmental Education Programme (NEEP)² and Eco-Schools³.

These open questions, coupled with the release in May 2002 of the RNCS, stimulated an active interest amongst Share-Net role-players in issues around the design and use of learning support materials for curriculum support. This, in the context of the *Hadedea Island* materials development process, gave rise during late 2002 to the question:

What features of learning support materials foster better use in classrooms?

Insights from research around this question could prove useful in informing future materials development processes and ways of offering teacher-support through Share-Net and other environmental education partners⁴. By early 2003, the case study of the adaptation, development and use of *the Hadedea Island Big Book* was identified by O'Donoghue, Lotz-Sistika and me as an appropriate way to open up creative engagement with the RNCS through materials development in Share-Net.

1.3 FROM COCKATOO ISLAND TO HADEDA ISLAND

In considering the *Cockatoo Island* materials in the context of South African schools and the political changes of post-apartheid South Africa (see Section 2.3), the Share-Net / RUEEU team saw an opportunity to adapt *Cockatoo Island* into a more contextually relevant resource: the *Hadedea Island Big Book*. However, the opportunity also led us to raise key questions:

- o What potential would the RNCS 1st Principle really hold for the strengthening of environmentally focused learning in schools?

² The National Environmental Education Programme (NEEP) was initiated by Education Minister Kadar Asmal in January 1999 to support the integration of environmental education in the South African school curriculum. In January 2002, the Danida-funded National Environmental Education Project for the General Education and Training Band (NEEP-GET) was formed to support the implementation of environmental education in the General Education and Training Band (NEEP, 2002).

³ The Eco-Schools programme was introduced and piloted in South African schools during 2003. Arising from the European-based Foundation for Environmental Education (FEE) and the international Eco-Schools programme, the South African initiative drew heavily on the already established School Environmental Policy and Management Plan Pack (SEP) that was developed and distributed through Share-Net. During the pilot phase in 2003, the SEP Pack was revised as the Eco-Schools Toolkit and attempted to foreground the importance of curriculum activities in establishing an environmental ethos in schools. The role of existing Share-Net materials and the prospect of developing others became a key area of concern with regard to support of Eco-Schools.

⁴ It is anticipated that the *Hadedea Island* materials could contribute to the future development of professional development programmes within the networks of WESSA, the NEEP, the RUEEU and the SADC-REEP.

- o Would it be possible for materials such as the *Hadedea Island Big Book* to support teaching and learning in ways that reflect this 1st Principle?
- o What design features of such a material would facilitate its use?
- o How would teachers interpret and use the materials?
- o What level of support would these teachers require?

As mentioned in Section 1.1, *Cockatoo Island* was developed as three separate Big Books. The first book, for learners in Grades 1-3, presents basic concepts associated with democracy, mainly through large colourful illustrations. The second and third books retain this style of artwork but include more written text according to their respective age groups (Grades 4-6 and Grades 7-9).

This study focuses only on the adaptation and use of the second book of *Cockatoo Island* as what I have termed the *Hadedea Island Big Book* (See Appendix A for a scaled-down version of the *Hadedea Island Big Book*). It should be noted, however, that a similar, overlapping process has been initiated to develop the *Hadedea Island Picture Pack* for Foundation Phase through the RUEEU, in partnership with Share-Net and WWF-SA⁵.

The *Hadedea Island Big Book* is a 14-page, A3-size, spiral-bound book. Black and white line illustrations, produced by an artist in the Eastern Cape Province, fill each page with animated yet realistic South African bird species intended to represent both common and endangered species⁶. The text is written mainly in verse and is limited to a maximum of six lines per page.

The combination of text and illustrations is intended to stimulate classroom discussions / activities related to freedom of speech, listening skills, respect for others' opinions, and what to do when an idea needs to be voiced to the community. Preceding or parallel to this, are opportunities to learn about the biology, diversity and behaviour of birds, considering in particular how each species is adapted to its habitat.

The *Hadedea Island Big Book* is not designed to be a conventional storybook with a beginning, middle and conclusion. Instead, it intends to stimulate further explorations in a variety of topics so that teachers and learners together construct their fuller story. Several wide-ranging opportunities exist for classroom themes, and from each theme arise opportunities for curriculum activities in most Learning Areas (Olvitt, 2003).

⁵ Funding for the development and trial use of the *Hadedea Island* curriculum materials was provided through the conservation organisation, WWF-SA by Rand Merchant Bank.

⁶ In the *Hadedea Island Big Book*, a sequence of eight pages introduces a selection of typical South African habitats and the 'elected bird representatives' of each: the Wattled Crane for the Wetlands & Rivers; the Cardinal Woodpecker for the Forests & Woodlands; the Black Oystercatcher for the Coasts & Estuaries; the Blue Swallow for the Grasslands; the Sugarbird for Fynbos; the Ostrich for the Karoo & Deserts and the Feral Pigeon for Urban Areas (See Appendix A).

The concluding pages of the *Hadedda Island Big Book* open up questions for both the teacher and the learner. When the elected birds fly off to the Parliament of Birds, the reader is asked "Can you imagine what choices they will make?"; and the final page presents a visual collage of challenging environmental issues for further discussion such as "over-crowding", "health and food" and "pollution". Through the metaphorical bird story, learners are expected to learn about an imaginary place and then translate this learning into their own real context.

1.4 RESEARCH QUESTION AND GOALS OF THIS STUDY

From the interactions and uncertainties outlined above, emerged a rationale and framework for the development and trialling of the *Hadedda Island* materials within the context of Share-Net. This rationale and framework forms the backbone of the research undertaking reported here, the design of which is described in Chapter 3.

Building on several earlier questions, the research question of this study was posed:

How might the guiding orientation of the RNCS 1st Principle be realised in(to) practice through the development and use of learning support materials?

The goals of the study are:

- o To investigate the interface of learning support materials, the RNCS 1st Principle and the Learning Outcomes of relevant Learning Areas;
- o To investigate strategies to support the successful use of learning programme units in Grade 4 classes, using these learning support materials.

with a long-term view, beyond the scope of this short study, to:

- o inform future materials-development and teacher support through Share-Net;
- o apply the materials in professional development programmes; and
- o distribute and use the materials more broadly through the NEEP-GET, SADC-REEP and WESSA networks.

1.5 THE LANGUAGE OF CURRICULUM TRANSITION

This study takes place during a period of curriculum transition. In the broadest sense, teachers are still making the transition from the previous government's Christian National Education curriculum. Although the transformed educational structures and outcomes-based approaches have been widely accepted and adopted at the levels of policy-making and management (Kraak, 1999), deeply entrenched epistemological perspectives linger in day-to-day classroom practices (Jansen & Christie, 1999; Taylor & Vinjevold, 1999; Lotz-Sisitka & Raven, 2000).

More specifically, the new and complex terminology of outcomes-based education (OBE) and Curriculum 2005 (C2005) that teachers were obliged to learn and assimilate into their practice from 1998 is, at the time of this study, being replaced by the streamlined structure and language of the RNCS⁷. I thus describe this period (from 2002 until the RNCS is introduced through all the grades) as one of interregnum⁸ and transition as teachers wrestle with a new educational orientation, new Learning Areas and a new approach to assessment which will, over the next few years, be presented according to slightly altered terminology and procedures.

Consequently, the reader of this study will notice that I use the terminology associated with C2005 in relation to teachers' narrations of their experiences, but use the revised language of the RNCS in other discussions, especially in relation to the study's research question and goals. Appendix F summarises the changes in terminology that apply to discussions in this study.

1.6 THE CONTENTS AND STRUCTURE OF THIS REPORT

Chapter Two: In the following chapter, I present interacting dimensions of the study's socio-historical context, highlighting the inter-relatedness of factors such as political / constitutional transformation, elements of the history of educational change in South Africa and the diversity of school infrastructure and classroom practice. The *Hadedda Island* study, however, attempts to go beyond a consideration of how socio-economic context, habituated practices and teacher capacity influence the ways in which learning support materials can be developed and used in intermediate level classrooms. Whilst recognising that these factors are inextricably linked to classroom-based practice and research, I build on them to focus more specifically on how learning support materials might arise from and support teaching and learning in line with the RNCS 1st Principle. Chapter Two, thus also presents a critical overview of the two key elements of the study's focus: (i) the RNCS and (ii) the relationship between learning support materials and curriculum activities.

Chapter Three: In this chapter, I describe and discuss the study's overall design, methodological approaches and methods of data collection used. These are presented as being consistent with the overall design and intentions of the study, namely context-based, empirical enquiry that intends to guide future materials development activities in support of curriculum policy. Issues of validity and trustworthiness are also considered in the light of the challenges of conducting classroom-based research.

⁷ At the time of this study in 2003, Department of Education training for Foundation Phase teachers was underway in preparation for the introduction of the RNCS into the Foundation Phase during 2004. This new curriculum is scheduled for gradual roll-out in Foundation, Intermediate and Senior Phase over the next five years; teachers will thus continue working with the existing Curriculum 2005 until the scheduled transition for their particular grade.

⁸ The word 'interregnum' is used to refer to an interval between two phases, usually in relation to the period between two rulers. I use the word here to suggest that this study is situated in the period between the 'authority' of two versions of the curriculum, and that period is accompanied by speculation, uncertainty and opportunity.

Chapter Four: This chapter describes Phase One of the action research process. It begins with a summary of how early ideas and draft materials were generated in Share-Net, and how this process overlapped with the interactions with Epworth Primary School. The teachers' uncertainties, contributions as well as their use of the *Hadedea Island Big Book* are presented in some detail.

Chapter Five: The experiences and insights gained from the early development and piloting during Phase One (refer to Chapter Four) form the backdrop to this chapter which describes the trial use of the *Hadedea Island Big Book* in four Grade 4 classrooms in Howick Preparatory School and Nogqaza Primary School. Avoiding a comparative approach, the chapter introduces each school individually and describes their differing experiences of using the *Hadedea Island Big Book*.

Chapter Six: This chapter draws on the descriptions presented in Chapters Four and Five to discuss the school-based case experiences in the light of the study's aims and research question. Emerging trends, insights and shaping experiences are presented with special emphasis on the interface between the RNCS 1st Principle, the development of the materials through Share-Net and the ways in which these materials were used by teachers in the participating schools. Interacting factors such as school management issues, teacher orientations and skills, and each school's access to supportive resources are also highlighted in recognition of their influence on the way learning support materials are taken up and used.

Chapter Seven: In this chapter, I reflect on the research process, the contextually-located experiences in the three participating schools and the emerging findings of this case study. I then put forward recommendations with regard to the future development of the *Hadedea Island* materials and suggest possible directions for further research.

1.7 A NOTE TO THE READER

Two dominant factors have shaped this study: its broad and complex context, and its timing. At the time of conducting this study, little research had been conducted into the RNCS. I was unable to source reliable documents or studies related to the 1st Principle in particular. It is thus important for the reader of this study to recognise that it is positioned at the portal of a new dimension of study on the environment-curriculum interface. The following chapter (Chapter Two) presents the study's scope and its socio-economic, political and educational contexts. Chapters 6 and 7 then reflect on the multiple dimensions and multiple perspectives arising from the experiences of working with the *Hadedea Island Big Book* in three schools. Considering this ambitious scope and the study's intentions to navigate 'unchartered waters', this report is only able to foreground selected dimensions of the curriculum / materials interface. In the broadest sense, it is centred on an 'opening up' of tensions, uncertainties and opportunities associated with the development of materials and their support into use, in the context of a transforming education system and broad-ranging environmental challenges.



Chapter Two

Habitats: A Complex Social Landscape of Teaching and Learning



*If curriculum visions are to be generative -
that is, if we are to be in a position to negotiate
visions of curriculum futures worth working for -
we must accept that we stand at the centre of
our own histories and fields of visualization as
responsible, engaged, embodied actors.*

Gough, 2002:5

2.1 INTRODUCTION

In this chapter, I review the Revised National Curriculum Statement's (RNCS's) emergence, implementation and context. In doing this, I recognise that before the complexity of South Africa's education policy and the challenges of its implementation can be understood, the social landscape in which the policy exists should be considered (Soudien *et al*, 2001). An historical summary of the emergence of outcomes-based education (OBE) in South Africa, the introduction of Curriculum 2005 (C2005) and the consequences of its revision provides an essential background to existing classroom practices which shape the way environmental learning support materials are taken up and used. An historical view also enables a closer, more critical examination of the development of the RNCS – in particular its Principle Statement – in response to which this study has arisen.

When reflecting on the emergence and implementation of C2005, I draw on Thomas Popkewitz's perspective of 'social epistemology' (Popkewitz, 1991; 1998) to explore how socio-political transformation processes have shaped – and continue to shape – curriculum reforms and classroom practices (see Section 2.2). This perspective not only provides a lens for interacting with curriculum processes, but it assists me to begin to understand in later chapters, the particular experiences of the *Hadedda Island Big Book* case study.

This chapter also outlines some key challenges of current classroom practice in relation to C2005 implementation that have arisen from the complex landscape of history, policy and power relations. I focus in particular on the provision and use of learning support materials and reflect on earlier processes of environmental education that laid the foundation for existing orientations and approaches in curriculum-based environmental education. Alongside this, I consider some current challenges of resource-based learning and the provision of learning support materials in South African schools as the context from and for which the *Hadedda Island* materials have been developed.

Although this chapter introduces the multiple dimensions of the *Hadedda Island* materials-development context in a sequential discussion, it should become evident to the reader that in practice they interact in a more organic way, in patterns that are dynamic and thus unpredictable.

2.2 A SOCIAL EPISTEMOLOGY AS A LENS FOR THIS STUDY

Popkewitz (1991) emphasises the importance of bringing the past into contact with the present in order to understand better the patterns and ruptures of our social conditions. Schooling, therefore, is shown to arise from / exist within a context of complex socio-historical relations that include institutional practices and "historically formed patterns of power relations" (*ibid*:15). What Popkewitz

(1991) describes as the intertwining of social, cultural, economic and religious strands, is further described by Janse van Rensburg (2002) as a web of relational dynamics that shape and constrain practices.

In later work, Popkewitz (2000a:168) elaborates on how political and cultural discourses come to relate to pedagogical practices¹. Epistemology, the theory of how knowledge is constructed and communicated, is hence recognised as being socially shaped, and a '*social epistemology*' begins to inform practice.

By orientating this study within a social epistemology, I am guided to interpret the RNCS as historically shaped within current socio-political reforms in South Africa. Epistemological perspectives in South Africa have shifted radically since the early 1990s as social reform and redress have been prioritised. This is discussed in greater detail in Section 2.3, but is mentioned here to highlight how intermeshed processes of curriculum engagement and classroom practice are embedded in their own histories.

The Review Committee of C2005 (Chisholm *et al.*, 2000:2) reports that the curriculum changes were "...not implemented onto a blank slate but in a context of immensely complex social inequalities and realities and diverse educational politics". This perspective begins to shed light on many challenges associated with curriculum implementation, especially those arising from what Popkewitz (1991:220) describes as "...the continual interplay between the social world of which schooling is a part and the dynamics and priorities of the conditions of schooling itself". Learning in particular is also identified as consisting of "historically constructed values, priorities, and dispositions toward how one should see and act toward the world" (Popkewitz, 1998:9). A social epistemological perspective therefore provides an illuminating framework for this study on the development of learning support materials, from which I can observe, support and work with teachers as they strive, in their individual ways and in their varied school settings, to respond to a new curriculum.

2.3 SOCIO-POLITICAL TRANSFORMATION IN SOUTH AFRICA

Since the end of apartheid and the emergence of South Africa's first democratic government in 1994, constitutional reforms have been largely driven by an agenda of development and socio-political redress. Policies in all aspects of national and local governance have been reviewed and revised as part of the reconstruction, development and transformation of South African society (DoE, 2001; Jansen & Christie, 1999).

¹ This is shown, for instance, in how contemporary discourse around 'the participatory teacher', 'action research' and 'collaboration' creates particular narratives through which practices are constructed (Popkewitz, 2000a:168).

The new Constitution (RSA, 2003) upholds the values of human dignity, equality, advancement of human rights and freedoms, non-racism, non-sexism, the rule of law and democratic principles. These values underpin all aspects of post-apartheid governance but, for the purposes of this study, I foreground only those with a direct environmental or educational focus.

Within the new Constitution of South Africa, the Bill of Rights (*ibid.*) affirms the democratic values of human dignity, equality and freedom, and sets down in Section 24 that:

...Everyone has the right:

- a. to an environment that is not harmful to their health and well-being; and
- b. to have the environment protected, for the benefit of the present and future generations, through reasonable legislative and other measures that:
- c.
 - i. prevent pollution and ecological degradation;
 - ii. promote conservation;
 - iii. secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

It is significant that, at constitutional level, the physical aspects of environment (such as 'pollution' and 'ecological degradation') are directly associated with people's quality of life and issues of social development and justice. This reflects an understanding of environment as "...interacting patterns of political, social and economic factors within the biological and physical world" (O'Donoghue, 1993:17) which has, since the early 1990s in particular, stimulated more integrated responses and approaches to South African environmental issues and challenges².

This integrated understanding of environment was also reflected in educational transformation in South Africa. The potentially transformative power of education was not overlooked and post-apartheid education policy reflects not only the anticipated role of schooling in building a new nation, but foregrounds environment and promotes curriculum activities that explore the relationship between human rights, a healthy environment, social justice and inclusivity (DoE, 2002).

In its background discussion of the RNCS, the Department of Education (2002:8) states that:

It [the RNCS] encourages amongst all learners an awareness and understanding of the rich diversity of cultures, beliefs and world views within which the unity of South Africa is manifested.

A discussion of the status and role of environment in the RNCS is provided in Section 2.12, but it is first necessary to consider a general overview of South African educational transformation (Section 2.4) and an historical perspective of South African environmental education processes (Section 2.5).

² This re-orientation is reflected in several environmental policies developed since 1994, for example the National Water Act (1998), the White Paper for Sustainable Coastal Development (1999), the National Waste Management Strategy (1999) and the National Environmental Management Act (1999).

2.4 EDUCATIONAL TRANSFORMATION IN SOUTH AFRICA

2.4.1 Education as an agent of change

Education is widely recognised as performing a critical role in maintaining societal structures and instilling values appropriate to the governing *status quo* (Donaldson, 2001; Popkewitz, 2000a; Popkewitz, 2000b; Taylor *et al.*, 1997; Lotz-Sisitka, 2003). According to Popkewitz (2000b:3):

In most nations, educational 'reform' is considered to be a strategic site for intervention that can promote the modernisation of nations, enhance the viability of economic systems within world markets, and link macro issues of regulation with micro patterns of socialisation and child rearing.

Elaborating on this perspective on educational reform as political practice, Popkewitz (2000a:164-5) describes how educational reform can be linked to the "social administration of the child" as the reform narrative becomes inscribed in pedagogical practices. In the South African context, Lotz-Sisitka (2003:11) draws on this to caution that recent institutionalising of environmental education in national curriculum frameworks may narrow environmental learning processes to 'comply' with principles, outcomes and assessment standards which may impose a particular orientation to "environmental citizenry"³.

In the light of these discussions, I find it necessary to consider critically the links between South African *constitutional* reform, *educational* transformation, *nation-building* in a post-apartheid context, the country's strong *developmental political agenda* and the *classroom-based socio-economic realities* in which teaching and learning occur. Links such as these are central to the case study of the *Hadedea Island Big Book* as they verify the importance of integrating ecological learning with teachers' and learners' social contexts, and they remind us of the strong political and economic forces that shape daily practices.

It is interesting and challenging to note that despite this close relationship between state reform and education, the Review Committee of C2005 (Chisholm *et al.*, 2000:1) cautions that:

...education (or even curriculum) cannot change society or on its own produce national development. Vesting such hopes in education is bound to lead to disillusionment.

In order to understand *why* socio-economic and political realities are so inextricably bound to epistemological changes but cannot in isolation be transformed *by* them, it is necessary to reflect on the histories that have shaped current educational practices in South Africa.

³ A more detailed probing of the extent to which this potential imposition of environmental values and responses undermines the fundamental principles of a democratic society lies beyond the scope of this study. The issue has,

2.4.2 From segregation to transformative education

The National Party that came to power in South Africa in 1948 formalised a segregated education system. White schools were required to adopt the world view of Christian National Education that had emerged from the Afrikaner nationalist movement of the 1930s and 1940s. The 1953 Bantu Education Act (Christie, 1991) brought the education of Black learners under direct government control and subsequent laws further entrenched an hierarchical, segregated system of education based on population groups⁴. These unequal education standards and opportunities combined with obstructive teaching conditions stimulated protests such as the African National Congress' Schools Boycott in 1955, ongoing strikes and protests at universities and colleges, the 1976 Soweto Uprising, more school boycotts in 1980 and, by the late 1980s and early 1990s, resistance from unified bodies such as SADTU, the South African Democratic Teachers' Union (Christie, 1991).

After the apartheid government was replaced in 1994 by the democratically elected African National Congress government, there commenced a radical re-orientation of the country's education system (Donaldson, 2001; Greenstein, 1997; Lotz-Sisitka, 2002; Morrow & King, 1998). The type of educational reform taken up in post-apartheid South Africa is described by Popkewitz (1991:13) as "...a mechanism to achieve economic revival, cultural transformation, and national solidarity".

As part of the process of dismantling apartheid-oriented structures, South Africa's nineteen separate and unequal education departments were unified under nine provincial departments, answerable to a single national Department of Education (DoE, 2001; DoE, 2002; Taylor & Vinjevoold, 1999). Central to this transformation process was the constitutional requirement that "...education be transformed and democratised in accordance with the values of human dignity, equality, human rights and freedom, non-racism and non-sexism" (DoE, 2001:4) whilst "...providing equal opportunities for children to develop the knowledge best-suited to building a peaceful and prosperous society" (Taylor & Vinjevoold, 1999:15-16).

Early steps towards realising a transformative curriculum of this kind were guided strongly by left-wing intellectuals within the labour movement (Kraak, 1999). It was soon recognised that the labour movement's desire for a strong economy characterised by high skills and high levels of employment articulated well with what Fleisch (2002:119) describes as "a post-communist social justice agenda" which led to the introduction of OBE and the establishment of the National Qualifications Framework.

Following the 1994 democratic elections, a process of revising syllabi and rationalising subjects was initiated. Racist and other insensitive language was removed from existing syllabi as an interim

however, formed a helpful orientation to the design and representation of the *Hadedda Island* materials which endeavor to avoid being impositional.

⁴ Examples of this legislation include: the Coloured Persons Education Act of 1963, the Indian Education Act of 1965 and the 1967 National Education Policy Act for White education (Christie, 1991).

measure (DoE, 2002). Following the establishment during 1995 of the South African Qualifications Authority (SAQA) Act, and the White Paper on Education and Training, foundations were laid for a single national curriculum (Kraak, 1999). According to the Department of Education (DoE, 2002:4), the *Lifelong Learning through a National Curriculum Framework* document of 1996 was "the first major curriculum statement of a democratic South Africa" that promoted a vision of an education system that would unite and shape literate, productive and self-fulfilled citizens for life in a violence-free and discrimination-free country.

It is in this developing context that a new curriculum within a framework of OBE was presented to South Africans in 1997. *Curriculum 2005* and its subsequent streamlining as the Revised National Curriculum Statement, was placed the hope of guiding South African educators and children in the transition from a segregated and restraining education system, to one of liberation and nation-building.

Before discussions on the emergence of OBE and C2005 (Section 2.6), it is necessary to reflect on the history of environmental education in South Africa and to consider its contributions to curriculum development initiatives. Such an historical perspective highlights how environmental education processes have directly and indirectly set "...a clear patterning framework for future environmental education processes (within the learning areas) in schools" (Lotz-Sisitka, 2002:111).

2.5 ENVIRONMENTAL EDUCATION PROCESSES IN SOUTH AFRICA: AN HISTORICAL PERSPECTIVE

2.5.1 Introduction

Despite a strong political commitment in post-apartheid South Africa to foregrounding the relationship between environmental issues, human rights and social justice (RSA, 2003) and a recognition of the central role education has to play in achieving this objective (DoE, 1997), environmental education continued to operate mainly on the periphery of formal education for a number of years (Lotz-Sisitka, 2002).

In this section, I briefly describe how environmental education processes have developed in South Africa, from the conservation-centred approaches of the years preceding and including the 1970s, to the more community-focused, participatory and action-orientated emphasis of the 1990s and early years of this decade. The strengthening identity and role of environmental education within the formal school curriculum is introduced in this section although a more detailed discussion on the RNCS and its 1st Principle Statement is presented in Sections 2.11 and 2.12.

2.5.2 Earlier conservation-orientated approaches to environmental education

According to Irwin (1990) environmental education as a distinct field appeared in South Africa in the early 1970s, at much the same time as the publication of the IUCN's definition of environmental education⁵, and the Tbilisi Principles of Environmental Education⁶. In South Africa, these international developments manifested themselves mainly as 'conservation education', with a great emphasis on basic ecology and the wise use of natural resources such as soil (*ibid.*).

Irwin (*ibid.*:5) acknowledges the role played by conservation-oriented non-government organisations such as the Wilderness Leadership School and the Wildlife and Environment Society of South Africa in recognising, "...the importance of educating people about their environmental responsibilities". Such organisations, together with the then Natal Parks Board and Natal Education Department, pioneered patterns of participatory and action-taking environmental education that laid a foundation for educational change in subsequent decades.

2.5.3 Trends and influences shaping South African environmental education processes

2.5.3.1 The EEPI and EECI

In discussing recent developments in the field of environmental education, Lotz-Sisitka (2002:101) describes how international treaties, conventions and principles⁷, a strengthening socially critical orientation to education and post-colonial transformation in South Africa combined to provide:

... unique opportunities for environmental educators to explore the social change role ascribed to environmental education processes, within the institutional frameworks of formal curricula and policy processes.

The Environmental Education Policy Initiative (EEPI) was an early strategy to play a more proactive, lobbying role in formal curriculum policy-making (Lotz-Sisitka, 2002; Lotz-Sisitka & Olivier, 2000). The EEPI working document (O'Donoghue, 1993:3) stated that:

Environmental education policy and curriculum initiatives should both underpin and be integrated within all other reconstruction priorities if we are to meet the challenges of our changing society.

⁵ In 1971, the IUCN defined environmental education as: "... the process of recognizing values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter-relatedness among man (sic.), his culture and his biophysical surroundings. Environmental education also entails practice in decision making and self-formulation of a code of behaviour about issues concerning environmental quality" (Irwin, 1990).

⁶ The Tbilisi Principles arose from the Tbilisi Intergovernmental Conference on Environmental Education in 1977. In essence, the principles called for a total view of environment (including natural, built, technological, socio-economic, political, moral, cultural-historical and aesthetic). It emphasised the need for interdisciplinary study and co-operative, investigative problem-solving approaches to environmental problems (UNEP, 1977).

⁷ Significant international documents include: The Tbilisi Principles; the NGO Forum Principles of 1992; and Chapter 36 of Agenda 21.

Through sustained interaction and a democratic, participatory orientation, the EEPI's deliberations with the National Education Coordinating Committee succeeded in establishing a clear environmental orientation in early curriculum designs (Lotz-Sisitka, 2002).

In 1993, the EEPI had also suggested that frameworks alone could not really guide environmental education processes. Instead, practitioners should attempt to address immediate challenges such as:

- o how to engage with reform in curriculum policy;
- o clarify understandings of the environment-education-development-curriculum reform interface;
- o how to enable teachers to engage in creative planning and action-taking in response to local environmental issues; and
- o address global and local needs through an educational orientation of problem-solving, social justice and sustainable living. (O'Donoghue, 1993; Lotz-Sisitka, 2002).

Building on these challenges as orientating guidelines, the Environmental Education Curriculum Initiative (EECI) (an extension of the EEPI) was able to make a significant contribution in 1996 to curriculum development processes in Pretoria to design C2005. Several broad environmentally orientated outcomes in the eight Learning Areas were developed, such as in Human and Social Science: "Learners will be able to make sound judgements about the development, utilisation and management of resources" and "Learners will be able to address social and environmental issues in order to promote development and social justice" (DoE, 1997:HSS-2).

2.5.3.2 The Learning for Sustainability project

The transition from an apartheid government to the first democratically elected government in 1994 was accompanied by a powerful discourse of equality, freedom and citizenship. The socio-political implications of such radical transformation are vast – even unquantifiable – but aspects of its significance for educational processes in South Africa are suggested by Huckle (1995:3):

Helping people to critically reflect and act on their environmental well-being is the prime goal of radical forms of environmental education, and critical action research is now seen as a common methodology underpinning the development of classroom teaching, curricula, teachers as professionals, and sustainable communities.

It is with this orientation that the Learning for Sustainability pilot project was initiated in 1997, to enable a detailed study of contextually responsive, school-based curriculum development. The project aimed to support curriculum development, materials development and pilot models for developing teachers' capacity in the arena of environmental education (Janse van Rensburg & Lotz-Sisitka, 2000). A key focus of the Learning for Sustainability project was to respond to the newly-

introduced OBE framework of C2005, in particular the integration of environmental education, using 'environment' as a phase organiser (DoE, 1997). The project was thus breaking new ground in researching with teachers how environment could be integrated meaningfully into the curriculum, in line with the challenging structures and expectations of C2005.

The Learning for Sustainability project was run with the Gauteng and Mpumalanga Departments of Education and worked both independently and in collaboration with the EECl and the Environmental Education Association of South Africa (EEASA) to make recommendations to the Gauteng and Mpumalanga Curriculum Development Units (Lotz-Sisitka & Janse van Rensburg, 2000). These recommendations, later EECl submissions to the Review Committee of C2005 and the appointment of an environmental education advisor to Minister Asmal brought curriculum developers' attention to the importance of environmental education, as documented in the Learning for Sustainability project (*ibid.*).

The EECl and the Learning for Sustainability project recognised the socially constructed nature of environmental issues and hence a contextually-located orientation was informed by socially critical and constructivist theories (Lotz-Sisitka & Janse van Rensburg, 2000). Through questionnaires and professional development activities that focused mainly on contextual environmental issues, the pilot project found that, in general, "... teachers had a very limited knowledge about environmental issues, including those directly affecting local contexts" (*ibid.*:25). Furthermore, when teachers were able to identify environmental issues, many adopted an uncritical approach. This was perceived by the project staff to be problematic in the light of the project's emphasis on 'socially critical environmental education' and, more broadly, in the light of the Department of Education's commitment to an education system that promotes: "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" (DoE, 1997:1).

Section 2.7 discusses the key findings of the Learning for Sustainability Project in relation to the integration of environment in C2005. The following section (2.5.3.3) introduces another significant environmental education research initiative that helped to guide future curriculum orientated environmental education processes: the NEEP-GET pilot research project.

2.5.3.3 The NEEP-GET pilot research

The National Environmental Education Programme (NEEP) of the Department of Education was established in 1999 to contribute to the implementation of environmental education at the levels of curriculum policy development, materials development, professional development and school-based activities (Lotz-Sisitka & Raven, 2001). The National Environmental Education Programme – General Education and Training (NEEP-GET) pilot research project, undertaken in 32 schools

across six provinces from August to December 2000, aimed to pilot the implementation of environmental education processes in schools. Working closely with the Department of Environmental Affairs and Tourism and the Department of Water Affairs and Forestry, the research project adopted a resource-based approach to professional development. It also drew on the recommendations of the Report of the Review Committee of Curriculum 2005 (Chisholm *et al.*, 2000) and coincided with the implementation of C2005 with Grades 4 – 8 (*ibid.*).

The NEEP-GET pilot research found that the broad-ranging socio-cultural and socio-economic school contexts, and teachers' curriculum knowledge and teaching styles strongly influenced the potential for environmental teaching and learning. Responding to the complexity of environmental issues posed pedagogical challenges for many educators, but the tangible, practical nature of learning support materials played an important role in addressing this challenge and supporting professional development. The collaborative, research-based approach to professional development seemed successful and worth further exploration in future projects.

These and other findings of the NEEP-GET pilot research provided valuable insights to guide possible responses for enabling and strengthening environmental learning and are further discussed in Section 2.7 which considers 'Environment in C2005'. Importantly, the NEEP-GET pilot project highlighted the need to probe further the proposed integration of 'environment across the curriculum' put forward by the Review Committee on C2005 (Chisholm *et al.*, 2000).

Following this pilot research project, the Danish-funded National Environmental Education Programme for the General Education and Training Band (NEEP-GET) was established to support the integration of environmental learning in schools, with a particular focus on professional development for teachers and curriculum support staff (NEEP-GET, 2002; Lotz-Sisitka, 2002).

2.5.3.4 Conclusion

The historical perspective on environmental education processes in South Africa, as described in this section, has shown how 'environment' has steadily shifted from being *outside* the curriculum to being *integrated* in it (see Section 2.7).

This study focuses on the interface of learning support materials and the RNCS 1st Principle, and Sections 2.10 and 2.12 pursue this focus. First, however, it is necessary to consider the frameworks, orientations and design of the transformed education system so that later discussions regarding the RNCS 1st Principle and its implications for environmental learning processes can be more clearly situated within its curriculum history. The following section (2.6) presents a brief, critical discussion of OBE as a framework for C2005, before a consideration in Section 2.7 of how environmental education is integrated in C2005.

2.6 THE EMERGENCE OF OUTCOMES-BASED EDUCATION AND CURRICULUM 2005

2.6.1 Background

Translating an idealistic, transformative vision of a highly skills-based and participatory education framework into state policy and institutional practice proved to be a major obstacle for the new government. Nevertheless, the vision evolved steadily: from the ANC's pre-election manifesto (*A Policy Framework for Education & Training*) (ANC, 2003) and the interim syllabus revisions of 1994, the developing curriculum adhered to requirements of the South African Qualifications Authority (SAQA) and drew on outcomes-based frameworks from countries such as Scotland, Australia, New Zealand and the United States, to emerge publicly in March 1997 as "OBE and Curriculum 2005" (Chisholm *et al.*, 2000; Christie, 1999; Fleisch, 2002; Jansen, 1999).

C2005 and OBE are often presented as interchangeable names for the new vision of South African education. Chisholm *et al.* (2000:9), however, clarify the distinction by describing C2005 as "...a planned process and strategy of curriculum change underpinned by elements of redress, access, equity and development", whereas OBE is one of several methodologies popular in progressive pedagogy, alongside learner-centredness, context-based learning and co-operative learning. This outcomes-based approach to curriculum reform requires a re-orientation from content-based syllabi to learning experiences structured around specified outcomes to be met before the learner can exit the formal school system (Fleisch, 2002).

2.6.2 OBE: a contested framework for education

Many key challenges and uncertainties regarding the adoption of an outcomes-based framework have been debated in the South African educational arena since 1997. Critical perspectives (articulated in works by Jansen, 1999b; Malcolm, 1999; Greenstein, 1997 and Christie, 1999) draw attention to the several axes of tension associated with OBE implementation, most especially its premature, politically driven introduction and epistemological inconsistencies associated with the attainment of outcomes.

OBE's emphasis on 'competencies' – now referred to as outcomes – as a way of equipping learners with skills for their future role in a competitive global economy has come under severe criticism (Jansen, 1999a; Jansen 1999b). The Principle Statement of the RNCS (DoE, 2002:12) states that the "...South African version of outcomes-based education is aimed at stimulating the minds of young people so that they are able to participate fully in economic and social life". For some critics, however, there is an inherent contradiction in an education system that is to be "...transformed and democratised in accordance with the values of human dignity, equality, human rights and freedom, non-racism and non-sexism" (DoE, 2001:4) which adopts an essentially behaviourist, skills-based

implementation design motivated by economic and technological ambitions (Donaldson, 2001; Greenstein, 1997; Jansen, 1999a).

One of the strongest criticisms of OBE has been focused on this product-centred, skills-based and objectives-driven nature. McKernan (1993:146) asserts that:

To treat knowledge as instrumental is to dismiss a most important possibility: that the justification lies within the process itself. The pupil who has been truly educated may lead us into unexplored meanings and outcomes, into unanticipated and unpredictable directions.

In accordance with this, Baxen and Soudien (1999:138-9) express concern over OBE's location in middle-class, modernist discourses and its assumptions about the ideal learner who is "...constructed simply as an innocent subject of the shaping pedagogical gaze of OBE".

The issue of OBE in South Africa is further problematised in the Review of C2005 (Chisholm *et al.*, 2000:29) which states that, despite the intention of an OBE framework to promote equity, the quality of *outcomes* is heavily dependant on the *inputs*. An OBE approach thus requires teachers to be skilled practitioners with a sound grasp of Learning Area content. As mentioned in Section 2.9, it has become evident that in the majority of schools, effective management, access to resources and the desired level of 'input' from teachers for successful implementation of an outcomes-based C2005 is an unrealistic short-term expectation.

2.6.3 An overview of the design and implementation of C2005

In 1997, the Department of Education presented Curriculum 2005 as an outcomes-based curriculum framework to guide teaching and learning in the 'New' South Africa. Described by Chisholm *et al.* (2000:1) as:

...probably the most significant curriculum reform in South African education of the last century... (that) deliberately intended to simultaneously overturn the legacy of apartheid education and catapult South Africa into the 21st Century....,

the shift to C2005 required a vision of a liberating, nation-building, learner-centred⁸ education system within a competency and skills-based framework (Chisholm *et al.*, 2000; Du Toit & Sguazzin, 2002). Chisholm *et al.* (2000) confirm that the progressive pedagogy of C2005 (namely an emphasis on learner-centredness, teaching and learning in context, cooperative learning and the role of

⁸ According to Spady, an American educationist who made a significant contribution to the shaping of OBE in South Africa, 'learner-centred' learning means that learners move through the units and tests at their own pace. It is the teacher's role to find methods, activities and explanations that benefit all learners so that each individual can gain mastery (Malcolm, 1999:93). However, more widely held interpretations of a learner-centred approach suggest its opposition to a *teacher-centred* approach. When applied to classroom practice, this simplified view can lead to trivial or procedural responses or an over-emphasis of learner-driven activities without adequate input from the teacher (Lotz-Sisitka & Raven, 2000; Chisholm, 2000).

teachers as facilitators) is employed to serve the *political* aims of C2005 (namely redress, equity and socio-economic development).

Curriculum cannot only be about socio-political reform, however. Extensive debate around the skills and knowledge to be covered in C2005 resulted in the creation of eight Learning Areas⁹. The General Education and Training (GET) band for Grades R to 9 was divided into Foundation Phase (Grade R – 3); Intermediate Phase (Grade 4 – 6) and Senior Phase (Grade 7 – 9). Each Learning Area in each phase was allocated "notional time" to guide the weighting of Learning Programmes. Critical Outcomes guided the overall teaching and learning process; each Learning Area then had Specific Outcomes, each of which had approximately three Assessment Criteria. These Assessment Criteria were further 'clarified' by Performance Indicators and Range Statements (DoE, 1997; Chisholm *et al.*, 2000).

Within a short time it became evident that epistemological inconsistencies (see Section 2.6.2) coupled with more pragmatic challenges (see Sections 2.9 and 2.10) were rendering the new curriculum powerless to achieve its objectives. By 1999, Christie (1999) was pointing to minimal in-service training, over-hasty, poorly planned implementation and resource-deprived learning environments as reasons for the weak engagement with C2005 by teachers. In 1999, the newly appointed Minister of Education, Kader Asmal, called for a review of the new curriculum. The findings of this review and the consequent streamlining of C2005 is elaborated upon in Section 2.11.

In the light of this study's focus, the following section (2.7) centres on the way environmental education and environmental concerns came to be portrayed and integrated in C2005. This builds on the historical perspective of South African environmental education processes already discussed in Section 2.5, and leads to a consideration of the RNCS's environmental focus (see Section 2.12) which is at the heart of the *Hadeda Island* materials development process.

2.7 ENVIRONMENT IN C2005

Shaped by interventions such as the EECl (see Section 2.5.3.1), 'environment' was presented in C2005 as a Phase Organiser: "the learner in the environment" (DoE, 1997:27) and was also embedded in the Specific Outcomes of selected Learning Areas. In Human and Social Science, for example, the Learning Area descriptor (DoE, 1997:HSS-2) described learners as developing "...a critical awareness of social and environmental patterns" and four of the nine Specific Outcomes promoted a clear environmental focus:

- Participate actively in promoting a just, democratic and equitable society;
- Make sound judgments about the development, utilization and management of resources;

⁹ The eight Learning Areas of C2005 are: Language, Literacy and Communication; Mathematical Literacy, Mathematics and Mathematical Sciences; Natural Science; Technology; Human and Social Sciences; Economic and Management Sciences; Arts and Culture; Life Orientation.

- Demonstrate an understanding of interrelationships between society and the natural environment;
- Address social and environmental issues in order to promote development and social justice.

These integration features of the new curriculum meant that, for environmental educators, the challenge was no longer to lobby for environmental education to be *included* in the curriculum, but to seek ways of *interpreting* environment as a phase organiser *within* curriculum policy (Lotz-Sistika, 2002).

The experiences of the Learning for Sustainability project (See Section 2.5.3.2), considered in relation to the generally unsuccessful implementation of C2005 and in response to the Review of C2005 (Chisholm *et al.*, 2000), were able to highlight the following considerations related to the integration of environmental education in C2005 (Janse van Rensburg & Lotz-Sisitka, 2000:106 – 7):

- Environmental education processes will not be successfully integrated into the curriculum unless there is a complete "... rethinking of educational processes in the light of environmental issues and risks".
- To achieve this, teachers need to be supported in developing critical thinking skills that are contextually located and "...accompanied by the introduction and application of available knowledge and experience".
- Teachers require deeper understandings of environmental issues and risks (such as 'biodiversity' and 'sustainability') and "... the capacity to apply this knowledge in local contexts through curriculum processes".
- Integration of 'environment' in the curriculum tends to generate superficial, insubstantial classroom activities unless teachers have strong content knowledge of their particular Learning Areas and are able to make the connection between this content and environmental issues and risks.
- The identification and provision of resource materials to support teachers in developing clearer pedagogical and environmental understandings could play a central role in integrating and strengthening environmental education processes in the curriculum.

Considering the integration of environment in the curriculum was central to the NEEP-GET pilot research project (Lotz-Sisitka & Raven, 2001) (see Section 2.5.3.3). Findings of this project echoed many of the earlier findings of the Learning for Sustainability project with regard to how teachers used an integrated approach to design curriculum activities around an environmental issue or risk. A thematic approach to environmental topics (such as 'water' and 'waste') was commonly used in schools, and teachers tended to adopt the provided learning support materials, be guided by the Learning Programme examples, and plan activities that integrated with more Learning Areas than the intended Natural Sciences, Human and Social Sciences and Life Orientation. The curriculum researchers reported, however, that teachers gave little consideration to why the curriculum links

were being made, and how these related to the Learning Programme's environmental focus and Learning Area requirements (*ibid.*).

Environmentally focused activities thus seemed to take place 'outside of' the regular curriculum, and in some cases this perpetuated the view held by some teachers that environmental education is a supplementary area that adds to the workload of teachers and learners alike (*ibid.*).

The NEEP-GET pilot project concluded that successful inclusion of environment in the curriculum would (i) require greater clarity at the level of curriculum policy (through Learning Area statements and environmental Learning Outcomes) and (ii) that learning support materials and units of work should be developed (possibly by partner groups) to support the development of environmentally focussed, contextually located Learning Programmes (Lotz-Sisitka & Raven, 2001).

The following section introduces a dimension embedded in all teaching practices which influences curriculum at all levels from policy formulation, to interpretation and implementation. 'Orientations to Curriculum' are introduced here within a discussion of developing environmental education processes to shed light on how teachers are currently responding to the challenges of curriculum transformation and to suggest tentatively how learning support material development processes might be approached.

2.8 ORIENTATIONS TO CURRICULUM

In this discussion, I draw attention to two broad and different orientations to curriculum: the first, a view of curriculum as predetermined policy to be operationalised / implemented (see Section 2.8.1), and the second, an alternative view of curriculum as a generative guiding framework (see Section 2.8.2). In the context of this study, I regard these orientations as significant due to their powerful shaping potential in the way educators, curriculum developers and materials developers present and mobilise educational processes.

2.8.1 Curriculum policy as something to be operationalised

Curriculum is commonly viewed as an 'imperative' created by experts and empowered planners for practitioners to implement. Holding such a view, teachers may find security in the (usually) rational logic of receiving, understanding and then implementing curriculum policy. However, procedural operationalising of this kind may promote blind acceptance of the policy or, as Gough (2002:3) suggests, responses based on "...seemingly disembodied, remote, abstract, and even chimerical prospects of futures in which we place little trust".

At this juncture of South African curriculum history, it is crucial for educators to come to an understanding of the nature and purpose of curriculum processes. Just as introducing new curriculum policy requires change in day-to-day classroom procedures and lesson content, it also requires change in teachers' orientations to those activities and understandings of the rationale behind, and the pedagogical value ascribed to them.

In South African schools, as reported by Chisholm *et al.* (2000), Janse van Rensburg & Lotz-Sisitka (2000) and Lotz-Sisitka & Raven (2001), many teachers still hold an orientation to curriculum that contradicts and undermines the outcomes-based vision of the transformed curriculum. The legacy of the apartheid education system (see Section 2.4) firmly entrenched the view of curriculum as 'law', as a set of stipulative procedures designed to reinforce an authoritarian and undemocratic society. At policy level in post-apartheid South Africa, this orientation has been completely inverted, but in practice its legacy persists. The consequent mismatch between old and new orientations impedes the transition to a new curriculum as teachers work to 'implement' the new curriculum's guiding framework as if it were a self-contained syllabus.

In theory and on paper, C2005 can be identified as "a vision" (Doll & Gough, 2002) and a guiding framework from which Learning Programmes can arise. The introduction to the Intermediate Phase Policy Document (DoE, 1997:2) describes the document as "... descriptive rather than prescriptive". It clearly states that: "It does not provide a syllabus, and should not be used as such". The expectation was that provinces and schools would build their own Learning Programmes in response to this open framework. In practice, there is little evidence to suggest that provincial departments and schools responded in this way (Chisholm *et al.*, 2000).

It is appropriate here, as a continuation of discussions in Section 2.6, to consider how an outcomes-based approach might influence teachers' orientations to curriculum. Through the specification of outcomes, the purpose of teaching and learning action may be seen as predetermined, hence limiting both teachers' and learners' roles in shaping the experience.

Lotz-Sisitka and Olivier (2000:77) encourage a contextualised approach to Learning Programme development as a strategy to avoid "... the reductionism and impotence of technocratic approaches to curriculum and its construction". They caution against the use of 'gate-keeping' orientations to curriculum such as progress mapping and assessment-driven models. These either require teachers to follow a linear sequence of work or to foreground assessment criteria as the core around which Learning Programmes are developed. Lotz-Sisitka and Olivier (*ibid.*) point out that such orientations undermine the intention of C2005 and limit the possibilities of contextual and responsive teaching and learning processes.

More recently, in the light of the RNCS, Lotz-Sisitka (pers. comm., 2003) expressed concern over the potential for Assessment Standards to "become the syllabus". This may falsely lead teachers to plan according to what they 'must' assess, rather than according to what learning *can* arise from the interface of Learning Outcomes, local context, teacher capacity and available resources.

National curriculum policy is, by design, a government's intervention to shape future citizens' skills and understandings (see Section 2.4.1) and it is thus inevitable that the approaches to (and successes of) implementation are prioritised. However, it is only when the sense of implementation shifts from 'contractual conformity' to 'mobilisation in context' that possibilities of creative, generative and responsive curriculum practices become more attainable.

2.8.2 Curriculum as a generative guiding framework

If curriculum visions are to be generative – that is, if we are to be in a position to negotiate visions of curriculum futures worth working for – we must accept that we stand at the centre of our own histories and fields of visualisation as responsible, engaged, embodied actors.

(Gough 2002:5)

This perspective on curriculum put forward by Gough (*ibid.*) presents curriculum processes as engaging, negotiable and generative. Within such frameworks, possibilities exist for the shaping of teaching and learning activities and the generation of future ones according to "... our own histories and fields of visualisation" (*ibid.*). Grundy (1987:6), reflecting a perspective of a social epistemology similar to that described by Popkewitz (1991) (see Section 2.2), describes curriculum as "... a cultural construction..." which arises from historical circumstances and the particular social milieu. Curriculum, therefore, should not be viewed as static and impositional, but as 'living' within the practice of those who engage with it.

In this study, which looks at the interface of the RNCS, contextually located classroom practice, and materials development and support through Share-Net, I turn to this notion of a generative curriculum to guide me through the multi-layered, multi-directional nature of curriculum work. Following interactions with Gough (2003, pers. comm.) it would appear that, in a South African context, a generative curriculum is one which allows existing practices, teaching materials and professional skills to 'strike against the flint stone of the new curriculum' and spark new insights into its vision and potential.

Hence, when approaching the challenge of developing, using and reporting on the *Hadedda Island Big Book* in the context of the RNCS 1st Principle, I consider how these new insights might help to generate responsive practice that enables educators to engage more actively with the social context of teaching and learning and with the creative potential of the *Hadedda Island Big Book* than they otherwise might through mere implementation of prescribed curriculum objectives.

2.8.3 Curriculum ambivalence in South African settings

It is interesting to note the often contradictory or ambiguous orientations to curriculum initiatives in the new democratic South Africa. Education Minister Kader Asmal, in the preface to the RNCS Policy Overview (DoE, 2002:1; emphasis mine), states:

The curriculum is and will be differently *interpreted and enacted* in diverse contexts. We will *improve and implement* it to the best of our ability. We will also make the most strenuous efforts to *enable the realisation of its vision* through addressing all those issues which make up teaching and learning.

Such words suggest that the RNCS is indeed a “vision” for which educators are urged to “... make the most strenuous efforts...” to “... interpret and enact...” according to their “... diverse contexts...”. However, the document (*ibid.*: 10; 14) then proceeds to present OBE and its accompanying Learning Outcomes and Assessment Standards as the *prescribed objectives* of the educational process.

Writing from outside of the South African context, Gough (2001:107) has referred to “... the familiar slogan system of OBE...” and cautions that an overemphasis of its language and procedural concepts can distract us from more open-ended deliberations – perhaps of the sort imagined by Asmal in his appeal to enable the vision of C2005 to become realised.

The obstinate question thus remains: how do educators begin to translate curriculum policy into relevant, accessible and constructive teaching and learning interactions? How do we “...work towards constructing a reality that matches the vision”? (*ibid.*:5)

2.8.4 Strengthening curriculum interactions

Lotz-Sisitka (2002:105) draws on experience with C2005 to explain that “... complex curriculum frameworks can obscure, decontextualise and disable meaningful participation in curriculum work in schools”. She describes, however, how findings from the NEEP-GET research project and the Learning for Sustainability pilot project point to a possible way forward:

Learning support materials and clear planning frameworks combine to provide the capital for processes of grounded inter-subjective curriculum development, interpretation and implementation practice amongst learners and educators (*ibid.*).

Potenza and Monyokolo (1999:231) also acknowledge that the translation of curriculum policy into practice will continue to be weak unless appropriate support structures are introduced. They propose that “... the three pillars of curriculum transformation” are set in place: curriculum development, teacher development, and the development, selection and supply of learning materials.

2.9 CHALLENGING REALITIES OF CLASSROOM PRACTICE AND BARRIERS TO CURRICULUM TRANSFORMATION

2.9.1 Introduction

The picture that emerges is worlds apart from that envisaged by the new curriculum. Whereas C2005 creates a vision of learners becoming 'world citizens', critically and conceptually empowered and information literate through learner-centred resource-based learning, the 'average' class in a township or rural school is teacher-centred, conceptually impoverished and under-resourced (Czerniewicz *et al.*, 2000:49).

In this section, I draw mainly on findings from various studies of the President's Education Initiative (PEI) as described by Taylor & Vinjevold (1999). To verify the findings of these studies and broaden understandings of earlier environmental education research, I refer also to the report of the NEEP-GET pilot research project (Lotz-Sisitka & Raven, 2001) and to the findings of the Review Committee on C2005 (Chisholm *et al.*, 2000). Although merely introductory, the section highlights aspects of typical classroom practice in South African schools as a necessary contextual background to understanding teachers' engagement with curriculum and to the materials that may support that engagement. It also draws attention to some challenges of teachers' practical engagement with curriculum policy and the rhetorical cycle this often creates.

2.9.2 Lingering constraints of ideology

Drawing on studies of South African education policy and practice in the early 1990s, Taylor & Vinjevold (1999) conclude that the doctrine of fundamental pedagogics has had a profound and detrimental effect on the country's school system which cannot easily be discarded. The dominance of this authoritarian, conservative ideology at the level of curriculum formulation and teacher training encouraged teachers to be uncritical and docile, both in their classroom practice and in their engagement with the broader educational context.

Furthermore, this conservative ideology was located within a segregated national education system which, "... prepared children in different ways for the positions they were expected to occupy in social, economic and political life under apartheid" (DoE, 2002:4).

Consequently, patterns of traditional teaching and social control persist: the development of communication skills and higher order cognitive skills such as analysis, enquiry and planning are seldom promoted in classrooms, and there is an emphasis on information transfer rather than conceptual understanding. For many children, these practices are reinforced in their homes and immediate communities where functional literacy levels are low and learning processes differ from those prominent in formal education (Taylor & Vinjevold, 1999; Lotz-Sisitka & Raven, 2001). (This significant issue is raised again in Section 2.10 on the role of learning support materials in C2005).

Practices such as whole-class recitation of facts, data recall and teacher dominance have become the norm in the majority of schools (*ibid.*), although Lotz-Sisitka & Raven (2001) do report evidence of teachers attempting to implement a wider range of teaching strategies for example alternating group work with individual work, pairing, show and tell, field work and using learning support materials.

2.9.3 Access to resources is not enough

Many classrooms are drastically under-resourced. Over and above the need for even basic equipment such as desks, chairs, chalkboards and stationery, learning support materials in support of curriculum activities are often in short supply, outdated or entirely lacking (Vinjevoold, 1999; Chisholm *et al.*, 2000). Even when these are available, research in many schools indicates that teachers' lack of conceptual knowledge and reading skills compounded with inadequate teacher training renders the availability of learning support materials during lessons mostly ineffectual (Chisholm *et al.*, 2000; Czerniewicz *et al.*, 2000). (See also Sections 2.5.3.2; 2.5.3.3 and 2.10.)

Institutional conditions combined with people's capacity and experience determine the effectiveness of schooling. Various studies within the PEI research project (Taylor & Vinjevoold, 1999) conclude that school management practices, the attitudes of principals, teachers and learners towards their school, language issues and teacher knowledge and competence all influence the quality of teaching and learning experiences.

2.9.4 Teachers grapple with the implications of C2005

In its review of achievements since 1994, the Department of Education (DoE, 2001:5) acknowledged that "...mandated policy by itself does not lead to institutional change". Without the translation of policy into practice, constitutional reforms prove to be largely ineffective in addressing the deeply entrenched power imbalances that define South African culture and lifestyles. Du Toit (1999:14) describes this as "hollow change" that fails to introduce meaningful transformation in people's daily lives¹⁰.

As South Africa emerges from a legacy of inequity, educators are challenged to translate transformative policies into tangible teaching orientations and practices. However, the NEEP-GET pilot research project (Lotz-Sisitka & Raven, 2001) reports that teachers had mixed, often contradictory, understandings of OBE. Many of these understandings appeared at a rhetorical level,

¹⁰ Referring to Du Toit's experiences, Janse van Rensburg & Lotz-Sisitka (2000) describe the 'dumping' of policy documentation on teachers who felt unequipped to interpret it. This is symptomatic of what Chisholm *et al.* (2000) describe as the failure of provincial and district offices to provide the necessary support to teachers faced with mediating a new curriculum. Elaborations of these dimensions go beyond the scope of this study but need to be recognised as playing a key role in shaping how curriculum policy comes to be translated into practice.

demonstrating a lack of clear and deep understandings of an OBE approach. Similarly, Pile and Smythe (1999, in Taylor & Vinjevold, 1999) found that teaching methods used were often contradictory to how the teachers perceived (or at least described) their practices. The study found that in pre-lesson interviews, teachers referred to progressive methods that are promoted in the new curriculum (such as discovery learning and group work) but in practice reverted to teacher-centred, facts-driven approaches. Chisholm *et al.* (2000:81) also recognised this trend and summarised it thus:

They [teachers] have, in many cases, developed a false sense of clarity that is evidenced in the mismatch between what they claim to know and the manner in which they externalise that understanding in the classroom.

Although brief, this discussion has drawn attention to trends in current practices in the majority of South African schools. From such indicators, it becomes evident that the expectations and time frames of OBE and C2005 implementation are idealistic, perhaps even unrealistic, in the light of the challenges faced by millions of learners and their teachers in their daily schooling activities. Acknowledgement of these contextual factors is an essential part of the process of adapting, developing and using learning support materials such as the *Hadedda Island Big Book*. The following section (2.10), builds on this section's introduction of the challenging realities of classroom practice and curriculum engagement to focus more specifically on the role of learning support materials in C2005.

2.10 THE ROLE OF LEARNING SUPPORT MATERIALS IN C2005

2.10.1 Introduction

Resource-based learning and the availability of relevant learning support materials is recognised as a cornerstone in the effective implementation of the new curriculum (Chisholm *et al.*,2000). Czerniewicz *et al.* (2000), however, caution that most of the available research and literature on resourced-based learning comes from Canada and Australia, countries whose relative economic wealth enables such an educational approach. Local commentators on OBE and C2005's dependence on well-resourced learning environments point out that the model of resourced-based learning could flounder unless teachers can access, evaluate, select and use learning materials (Potenza & Monyokolo, 1999; Czerniewicz, 2000; Lotz-Sisitka & Raven, 2001; Janse van Rensburg & Lotz-Sisitka, 2000; Baxen & Green, 1999).

The vision of a successfully implemented C2005 places significant demands on schools and teachers to enable resourced-based learning. Classrooms are required to be well-resourced (with text books, apparatus, reference books, stationery etc.) and teachers are expected to use such materials effectively, develop Learning Programmes and, where necessary, prepare their own

learning support materials (Chisholm *et al.*, 2000; DoE, 2002). (Some of the challenges associated with this vision are presented in Section 2.9.)

This section draws attention to key factors influencing the current status and role of learning support materials in C2005 and summarises some benefits and challenges associated with their use.

2.10.2 What is meant by 'learning support materials'?

After a review of relevant Department of Education publications between 1996 and 1998, Czerniewicz *et al.* (2000) conclude that there is little clarity and consistency with regard to the nature and role of learning support materials in the new curriculum, and the role partner groups might play in producing them and supporting them into use.

The Department of Education's discussion document on learning support materials (DoE, undated:14) describes learning support materials as "anything which facilitates learning", and lists as examples: magazines, newspapers, personal experiences, activity sheets, masks, puzzles, posters and advertisements (amongst others). No reference is made, however, to what pedagogical processes need to occur before an ordinary poster or magazine, for instance, can stimulate learning to take place.

Czerniewicz *et al.* (2000:20) offer some clarification on the distinction between resources and learning support materials. They describe 'resources' as any raw materials; these may only be regarded as 'learning support materials' when they "...contribute to a pedagogical purpose". The key to this difference appears to lie not only in the way the materials are designed, but also in the way they are interpreted and used by teachers within curriculum frameworks (Czerniewicz *et al.*, 2000; Chisholm *et al.*, 2000; Lotz-Sisitka & Janse van Rensburg, 2000; Olvitt, 2002).

In November 2003, an updated draft of the abovementioned Department of Education's discussion document was presented at the Rhodes University Environmental Education Unit / NEEP workshop to develop guidelines on the development of learning support materials (DoE, 2003). A noteworthy adjustment to the earlier document was the revision of the term 'learning support material' to 'learning and teaching support material'. This name change reflects a growing recognition of the intermeshed processes of teaching and learning and the supportive role that materials may have in both processes¹¹.

¹¹ Although strongly supportive of the subtle but significant name change from 'learning support material' to 'learning and teaching support material', I have elected not to use it in this study. The name change emerged at an advanced stage during the study and its adoption in this report would have been incongruent with earlier discussions, appendices and related publications.

2.10.3 Learning support materials in curriculum settings

Despite the learner-centred, stimulating and empowering classrooms described in C2005's vision of a new education system, and its emphasis on development and use of learning support materials by teachers, classroom-based research since 1998 presents a picture of the average classroom being teacher-centred, under-resourced and conceptually limited / limiting (Czerniewicz *et al.*, 2000; Taylor & Vinjevold, 1999).

The Review Committee on C2005 (Chisholm *et al.*, 2000:62) report that "... the management of LSMs and approaches to training adopted in C2005 have undermined this vision [of teachers as developers and users of learning support materials]". The report identifies five elements affecting the availability of quality learning support materials: budget constraints; the provisioning process; teachers' lack of skills to evaluate and select materials; language issues and historical inequalities.

In agreement with these findings, Czerniewicz *et al.* (2000:50) point out that factors such as curriculum, learning support materials, teachers' contexts and learners' contexts are inter-related and exist in a dynamic relationship. They refer to "different communities of practice" which are formed through daily classroom activities, available resources, language, the modernist discourse of OBE and C2005, the South African context of post-apartheid transformation and international shifts in economics and epistemology.

The President's Education Initiative (PEI) (Taylor & Vinjevold, 1999) reports that few teachers design and make their own teaching materials. Many teachers in the PEI study cited limited creativity and insecure storage facilities as the main obstacles to materials development. Potenza and Monyokolo (1999), however, draw on their professional experience as materials developers to recognise how unrealistic it is to expect teachers to develop their own learning support materials. They foreground time constraints, resource limitations and educational complexity as the major challenges likely to undermine the new curriculum's implementation.

Other trends emerging from various studies of teachers' mediation of learning support materials (Czerniewicz *et al.*, 2000; Lotz-Sisitka & Janse van Rensburg, 2000; Janse van Rensburg & Lotz-Sisitka, 2000; Lotz-Sisitka & Raven, 2001; Taylor & Vinjevold, 1999) suggest that teachers most commonly assimilate materials into their existing practice rather than re-align their teaching with the materials developer's vision. Conceptual goals are usually not achieved because "...the activities in learning support materials become an end in themselves rather than a means of developing concepts" (Czerniewicz *et al.*, 2000:60-1). Consequently, activities may be trivial, inappropriate to the learning level or procedural rather than conceptually supportive (*ibid.*; Lotz-Sisitka & Raven, 2001).

Similarly, the findings of the PEI research projects (Taylor & Vinjevoll, 1999) and the Learning for Sustainability pilot project (Lotz-Sisitka & Olivier, 2000) indicate that few teachers use textbooks in a systematic way and that when other learning support materials are used, they usually support *ad hoc* activities rather than carefully designed learning programmes.

Effective use of learning support materials thus appears to be inextricably linked to issues of teacher professional development as, without the skills and confidence to evaluate, select, adapt and use available learning support materials, the current weaknesses of use outlined above will continue to undermine curriculum processes. Mediated engagement with learning support materials through professional development processes, as reported by the Learning for Sustainability project (Janse van Rensburg & Lotz-Sisitka, 2000) and the NEEP-GET pilot project (Lotz-Sisitka & Raven, 2001), proved invaluable in deepening both curriculum and environmental understandings and may provide a model for future research interventions.

Recognition of the challenges and opportunities associated with the development and use of learning support materials is crucial to the development of the *Hadedda Island* materials because such insights can guide both the materials' design and ways in which they can be mediated into use. As explained in Chapter One, this study considers the interface of the RNCS 1st Principle and the development and use of learning support materials. This section has mapped out key issues related to the use of learning support materials in C2005. The following sections (2.11 and 2.12) then introduce the RNCS and its integration of environmental education so that the complex social landscape of teaching and learning in which this study nests, can be constructed.

2.11 THE STREAMLINING OF C2005 AND THE INTRODUCTION OF THE RNCS

In the Report of the Review Committee on Curriculum 2005, Chisholm *et al.* (2000:12) points out that "...Curriculum 2005 is not cast in stone and can change to address the problems that have emerged in implementation". The report gave a comprehensive and realistic appraisal of the implementation of C2005, reporting that the implementation of C2005 was retarded mainly by the following:

- Complex language and confusing new terminology used in C2005 documents;
- Inadequate development of basic literacy and numeracy skills due to overcrowding of the GET curriculum with 8 Learning Areas;
- Design flaws in the curriculum structure that emphasised its integration but neglected conceptual coherence;
- Lack of clarity on assessment policy and how this aligns with the curriculum as a whole;
- Inadequate teacher training;
- Uneven availability of learning support materials in schools and generally poor use when they are available;

- o Limited basic teaching and learning resources such as exercise books, stationery and duplicating machines;
- o Breakdowns in support provided by and to provincial and district officials;
- o General confusion amongst teachers, trainers and officials about the design and implementation of C2005 and OBE;
- o The over-hasty implementation of C2005 which has deprived it of a strong foundation.

The Review, published during 2000, became a keystone document in the subsequent revision and streamlining of C2005.

During 2001, a Ministerial Project Committee to Streamline and Strengthen C2005 drafted the RNCS for Grades R – 9, which was then released for public comment. The resultant RNCS Grades R – 9 was published in May 2002, with implementation set to take place between 2004 and 2008. the Department of Education (DoE, 2002:6) clarifies that the RNCS is:

... not a new curriculum but a streamlining and strengthening of Curriculum 2005. It keeps intact the principles, purposes and thrust of Curriculum 2005 and affirms the commitment to outcomes-based education.

The streamlined curriculum has three rather than eight design features: Critical and Development Outcomes, Learning Outcomes, and Assessment Standards. The Learning Areas remain generally unchanged although some names were adjusted in the interests of clarity and as part of the Department of Education's commitment to reduce the complex language and structure of C2005 (see Appendix F). The Learning Outcomes in each Learning Area do not prescribe content or method, but offer a description of what learners should know or demonstrate by the end of Grade 9 (the end of the GET band). The Assessment Standards do not prescribe content or method either. They are specific to each grade and "... describe the [minimum] level at which learners should demonstrate their achievement of the learning outcome(s) and the ways (depth and breadth) of demonstrating their achievement" (DoE, 2002:14).

According to the Overview of the RNCS Grades R – 9 policy document (DoE, 2002), five principles guide all activities of the new curriculum. These principles are:

- o Social Justice, a healthy environment, human rights and inclusivity;
- o Outcomes-based education;
- o A high level of skills and knowledge for all;
- o Clarity and accessibility;
- o Progression and integration.

(See Appendix C for a description of these five principles.)

This study's interest lies in the first of these five principles as it is therein that the integration of environment in the RNCS is embedded. The following section (2.12) considers this integration in

some depth as it is the main reference point for subsequent chapters' discussions on the *Hadedu Island* materials development process.

2.12 ENVIRONMENT AND THE RNCS

The integration of environment into the curriculum was strengthened by the streamlining of C2005. In C2005, 'environment' was a phase organiser and teachers were thus required to organise some of their Learning Programmes around the focus of "the learner in the environment" (DoE, 1997:27). As explained in Section 2.7, research into early school-based implementation of C2005 suggested that integration of environment into the curriculum was generally poorly understood, resulting in insubstantial and often inappropriate classroom activities (Lotz-Sisitka, 2002; Janse van Rensburg & Lotz-Sisitka, 2000; Lotz-Sisitka & Raven, 2001). Environmental education was still widely perceived to exist outside of the curriculum, to require specialist attention (in Learning Areas such as Natural Sciences and Human and Social Sciences) and to involve extra work for teachers.

When the Review Committee on C2005 (Chisholm *et al.*, 2000) recommended the dropping of phase organisers, the Department of Education's commitment to environmental education was sustained through a directive that: "The relationship between human rights, a healthy environment and social justice [must be] addressed in each Learning Area statement" (DoE, 2002:10).

Furthermore, through the development of the RNCS Principle Statement, this commitment was formalised in the 1st Principle:

Social justice, a healthy environment, human rights and inclusivity:

The curriculum can play a vital role in creating awareness of the relationship between human rights, a healthy environment, social justice and inclusivity. In some countries this is done through subjects such as civics. The Revised National Curriculum Statement has tried to ensure that all Learning Area Statements reflect the principles and practices of social justice, respect for the environment and human rights as defined in the Constitution. In particular, the curriculum attempts to be sensitive to issues of poverty, inequality, race, gender, age, disability, and such challenges as HIV/AIDS (DoE, 2002:10).

A critical (but easily overlooked) feature of this principle is the term "relationship between". Through this, the facets of 'human rights', 'a healthy environment', 'social justice' and 'inclusivity' cannot be considered in isolation, but must be recognised as interacting dimensions. The examples presented in the Principle Statement as possible focus areas (poverty, inequality, race, gender, age, disability, and HIV/AIDS) should thus be considered from the perspectives of socio-political and cultural context, economic reality and biophysical sustainability.

This subtlety is significant for the conceptualising, design and mediation of learning support materials because it requires attention to be paid to the *causes and consequences* of environmental issues and risks as they exist *within* social, cultural, political and economic contexts.

Curriculum committees, tasked during 2001 with revising and drafting the eight Learning Area Statements, were required to align all new Learning Outcomes and Assessment Standards with the RNCS guiding principles. Consequently, an environmental focus is embedded *within* all Learning Area statements of the RNCS and no longer requires 'outside' intervention to gain recognition within the curriculum. What is required, however, is careful exploration of how environment within each Learning Area can be interpreted, supported and mobilised. It was with this challenge in mind that the research process reported here was designed (see Chapter Three).

2.13 CONCLUSIONS

This chapter has attempted to scope the multiple dimensions of this study's socio-historical, socio-economic and curriculum context. Such a social epistemological perspective (Section 2.2) necessitates recognition of the recent interplay between the history of South African education within broader social transformation patterns (Sections 2.3 and 2.4), and current socio-pedagogical realities (Section 2.9). Enmeshed in these processes have been the dynamic environmental education processes of the past few decades (Section 2.5) that have made significant contributions to recent curriculum developments and foregrounded the importance of environmental learning in the South African education system (Sections 2.7 and 2.12). At policy level, the educational terrain has been roughly mapped, but the details of the experience can only be revealed by those that engage intimately with the landscape. By assuming a generative, context-based approach to one materials development initiative, this study aims to pioneer the uncharted path of interpreting the RNCS 1st Principle within a generative orientation to curriculum, and hopefully open the way for future similar studies.



Chapter Three

Flight Formation: Research Design Decisions



The point of the process, in short, is 'authenticity' - to enable teachers to voice honestly and truthfully their perceptions of the events that occurred in their classrooms. Such truths leave room for the irreducible complexity of classroom practice while yet offering penetrating, important insights into teachers' experience of it.

O'Dea (1994:167)

3.1 RESEARCH THAT IS SOCIALLY SHAPED AND SHAPING

This chapter describes perspectives and considerations that shaped the design of the study. It also describes the methods used to generate information and considers how these methods contribute to the integrity of the study. It locates the study within an interpretive tradition (Janse van Rensburg, 2001b; Connole, 1998) and attempts to demonstrate how the unfolding research process responded appropriately to the challenges and opportunities associated with such a tradition.

Chapters One and Two of this study reveal in some detail the complex social nature of a study at the interface of curriculum processes, materials development and the realities of classroom practice. In accordance with Popkewitz's social epistemological perspective (Popkewitz, 1991, 2000a, 2000b) it was necessary to design the research in a way that would illuminate and be sensitive to the study's multiple dimensions and contextually embedded nature, rather than objectify and quantify such features (see Section 2.2). Recognising the nature of research as a social practice, I have drawn on Janse van Rensburg's (2001a:4) description of research as:

... a creative and socially shaped process in which researchers continuously make active decisions about developing and adjusting methods for enquiry, and make socially shaped interpretations, through which they eventually construct a 'fabric', a particular, historically situated (re)presentation of the topic being researched.

This view of research interactions weaving a 'fabric' echoes Popkewitz's (1991:220) metaphorical description of school reform as a thread of many fibres. He points out that reform practices in schools are a combination of *interacting* practices and situations over time, just as the strength of a thread is found in the *intertwining* of individual fibres. In undertaking this study, therefore, I was challenged to seek ways not only to reveal its multiple 'strands', but to make sense of, portray and learn from them.

3.2 THE RESEARCH PROCESS

3.2.1 An overview

When the opportunity arose to adapt and develop the *Hadedda Island* materials, I began – in consultation with colleagues – to formulate a research question, initiate a formative process of drafting materials and orientate myself to the study. This is referred to as Phase One. These early ideas and the draft materials were further developed in Phase Two during the pilot testing and development process with two teachers at Epworth School. As described in Chapter Four, it was during this creative phase that the materials were shaped through reflection, critical engagement and problem-solving.

The consequent progressive conceptual clarification and development of the draft materials directly informed and shaped Phase Three, the stage of trialling the emerging materials and activities in two other local schools: Howick Preparatory School and Nogqaza Primary School. Due to the significantly different socio-economic and pedagogical contexts of these two schools, I found it appropriate to adopt different approaches and work according to different time frames but attempted, as far as possible, to be consistent in my techniques of generating and recording information (see Sections 3.4.2 – 3.4.8).

On completion of the fieldwork, I commenced Phase Four, a process of further reflection and interpretation of the school-based observations. This allowed insights and recommendations to emerge in response to the two areas I had initially set out to investigate: (i) ways in which the *Hadedda Island Big Book* could be used in Intermediate Level classrooms in relation to the RNCS 1st Principle, and (ii) what features of this learning support material could make it more effective in support of learning with this focus (see Section 1.4).

Through this developing and interacting process of action and reflection, it became evident that the study was unfolding with an action research focus. Although the study did not prioritise bringing about social change¹, a feature of action research (Atweh *et al.*, 1998), it sought to stimulate teachers to engage with materials, mobilise them as learning support materials in ways they considered most constructive and / or appropriate, and then reflect on that process with me, the materials developer and researcher, to make recommendations for future practice regarding materials' design within curriculum frameworks. A distinction was thus made between (i) the actual development of the *Hadedda Island Big Book* within an open and developing action research process², and (ii) the research focus on the RNCS 1st Principle as a more interpretive process within the study's emerging evidence and contexts.

Within these two strands is woven my own journey of developing the draft materials, supporting these into use, observing and reflecting on them, and then responding by making changes in their design and seeking further clarification through continued classroom observations and interactions with teachers. A tabulated summary of these research strands and interlinked processes is provided below (Table 3.1) and a more detailed discussion of the various methods used is presented in Section 3.4.

¹ When I state that the study does not prioritise bringing about social change, I do not intend to suggest that this goal is irrelevant or undesirable. The specific focus of this study is to investigate ways in which a learning support material articulates with the RNCS 1st Principle, so to prioritise the much-needed teacher support and transformation of the South African schooling system (as required by a pure action research undertaking) would be to distract from the study's goal and scope.

² I elaborated on this aspect of the materials development process in a paper presented at the 2003 EEASA Conference in Namibia. The paper, written midway through this study, describes early insights into how design features of the *Hadedda Island Big Book* supported teachers in developing curriculum activities (Olvitt, 2003).

Table 3.1 A summary of the phases of research in this study

	PHASE ONE (Oct. 2002 → early Jan. 2003) [An Action Research process of LSM Development]	PHASE TWO (Early January → early April)	PHASE THREE (End February → mid June) [An Interpretivist process during classroom-based implementation]	PHASE FOUR (July → November)
Goal of the phase	<ul style="list-style-type: none"> ○ Plan roles and time frames for LSM development ○ Adapt Australian materials to produce draft version ○ Design of research process 	<ul style="list-style-type: none"> ○ Work creatively with Epworth teachers to shape development of Big Book. ○ Explore / document possible learning activities and conceptual approaches to <i>Hadedea Island</i> 	<ul style="list-style-type: none"> ○ Provide <i>Hadedea Island Big Book</i> and draft teacher guide to Howick Prep & Noggaza PS for trial use. ○ Record teaching / learning interactions using <i>Hadedea Island</i> materials 	<ul style="list-style-type: none"> ○ Conclude information-gathering activities in schools. ○ Interpret information w.r.t RNCS 1st Principle & LAs. ○ Interpret information w.r.t refinement of <i>H.I Big Book</i> for Share-Net development
Strategies and Methods used	<ul style="list-style-type: none"> ○ Collaboration with colleagues and artist ○ 'Mapping' available information and useful contacts ○ Reflection on existing LSMs (design and use) 	<ul style="list-style-type: none"> ○ Focus group meetings with both teachers ○ Classroom observations ○ Ongoing consultation with teachers ○ Photos and video 	<ul style="list-style-type: none"> ○ Classroom observations ○ Informal interactions with teachers ○ Record keeping through photos and video 	<ul style="list-style-type: none"> ○ Final interviews ○ Teachers annotate photographs ○ Member checking /verification
Type of action	<ul style="list-style-type: none"> ○ Development of <i>Big Book</i> concept ○ Consult with artist r.e. artwork style and content ○ Draft rhyming text 	<ul style="list-style-type: none"> ○ Page-by-page development and use of <i>Big Book</i>, shaped by teachers' use and critical engagement 	<ul style="list-style-type: none"> ○ Regular visits to both schools to observe (and sometimes to offer support) 	<ul style="list-style-type: none"> ○ Presentation of <i>H.I</i> material at conference and workshop. ○ Informal interaction with other EE practitioners ○ Interpretation of information & reflection
Type of reflection	<ul style="list-style-type: none"> ○ Interactions with colleagues ○ Journal reflections 	<ul style="list-style-type: none"> ○ Interactions with colleagues and teachers ○ Journal reflections 	<ul style="list-style-type: none"> ○ Interactions with colleagues and teachers ○ Journal reflections 	<ul style="list-style-type: none"> ○ Interactions with colleagues and teachers ○ Journal reflections
Outputs of phase	<ul style="list-style-type: none"> ○ Drafting of materials in progress ○ Draft research proposal ○ Clearer understanding of RNCS. 	<ul style="list-style-type: none"> ○ Draft version of <i>Big Book</i> ○ Collection of ideas r.e. the LSM in use ○ Insights into teaching with socio-ecological focus 	<ul style="list-style-type: none"> ○ Variety of information for interpretation ○ Recommendations and insights r.e. design and use of Big Book 	<ul style="list-style-type: none"> ○ Progressive clarification of issues of design and use of <i>Big Book</i> ○ Insights into environment in curriculum ○ Strategy for development of <i>Hadedea Island</i> curriculum pack through Share-Net

3.2.2 School-based interactions

The majority of information generated in this study arose from school-based interactions. Chapters Four and Five describe the chronology of interactions with each school in greater detail, but here I introduce the general approaches used during Phases Two and Three to deepen my understandings of the schools' contexts and to generate information in response to the study's research question.

During Phase Two with Epworth School, I met with Mrs Oftebro and Mr Sleidrecht on several occasions. These were usually informal discussions to plan and reflect on the unfolding activities arising from the *Hadedea Island Big Book*, but I also conducted two tape-recorded interviews, one at the start and one on completion of the pilot phase. These recorded interviews (and those conducted with the teachers of Howick Preparatory School and Nogqaza Primary School) were then transcribed and referred to during the interpretation phase. These interviews, combined with my reflective journal entries, formed the basis of the emerging picture of how the *Hadedea Island Big Book* had been taken up and used in the schools. Other sources of information that the interactions generated were valuable in verifying or broadening this picture.

Each teacher was requested to complete a school, classroom and teacher profile to assist me in developing a clearer understanding of the participating schools' contextual backgrounds. This was based on similar profiles used in the NEEP-GET pilot research project (see Section 2.5.3.3) and included questions such as the number of learners in the class, the teachers' preferred teaching methods and the current status of environmental learning in the school (see Appendix G).

Teachers were also requested to complete a two page Reporting Template on the *Hadedea Island Big Book* (see Appendix H). The questions, such as: "Were the *Hadedea Island* activities relevant to your school / community context?" and "With what Learning Areas did these activities correspond?" were generally duplicated in the final interviews I conducted, but they were valuable in giving me an indication of the types of responses emerging from teachers' experiences and I could therefore frame my interview schedules more appropriately. Teachers were also requested to provide records of their lesson planning but the few that I did receive were either vague or non-existent.

As I began to write Chapters Four and Five, additional questions arose that required clarification before I could present an accurate and thorough account of each school's experiences as constructed through my interventions. I therefore developed Supplementary Questionnaires that consisted of several brief questions such as: "Why did you describe the community-school relationship as 'not applicable'?" and "How many learners are in the school?" These questionnaires were thus specifically designed for each school in response to my uncertainties, and were given to teachers to fill in some time after they had completed work with the *Hadedea Island Big Book*.

As each school finalised its activities around the *Hadedea Island Big Book*, I requested samples of learners' work. These were random selections and thus reflected work from learners with a range of

abilities and interest levels. These samples were subsequently considered in relation to the teachers' accounts of their planning and activities, and thus contributed to the triangulation of the available information.

The information generated during the school-based interactions of this study is referred to extensively in Chapters Four and Five as they present the emerging narratives of the three schools. During Phase Four, in the first level of interpretation (see Section 3.5.1), I coded these sets of information according to their method and the school involved. Hence, for example, the second interview conducted with the teachers of Epworth School is coded as: TI-ES2 (Teacher Interview – Epworth School; second interview). Table 3.2 below summarises the coding used in this study and is intended to support the reader in tracing the many coded references used in Chapters Four and Five.

Table 3.2 A summary of the codes and their explanations, as used in this study to refer to the various sets of information

CODE	EXPLANATION
TP-HP1 and 2	Teacher Profile – Howick Preparatory School 1 and 2
TP-ES1 and 2	Teacher Profile – Epworth School 1 and 2
TP-NP1 and 2	Teacher Profile – Nogqaza Primary School 1 and 2
TI-HP	Teacher Interview – Howick Preparatory School
TI-E1 and 2	Teacher Interview – Epworth School 1 and 2
TI-NP	Teacher Interview – Nogqaza Primary School
SQ-HP1 and 2	Supplementary Questions – Howick Preparatory School
SQ-ES1 and 2	Supplementary Questions – Epworth School
SQ-NP1 and 2	Supplementary Questions – Nogqaza Primary School
RT-HP1 and 2	Reporting Template – Howick Preparatory School
RT-ES1 and 2	Reporting Template – Epworth School
RT-NP1 and 2	Reporting Template – Nogqaza Primary School
RJA	Research Journal A
RJB	Research Journal B
LW-HP	Learners' Work – Howick Preparatory School (followed by learner's first name)
LW-ES	Learners' Work – Epworth School (followed by learner's first name)
LW-NP	Learners' Work – Nogqaza Primary School (followed by learner's first name)

3.3 THE USE OF CASE STUDIES

The research process has been designed as a developing study that engages multiple cases (Yin, 1994:44), with several levels of description and analysis. The various levels are inter-related as each process generates information that contributes to understanding the next. On the broadest level is the case of developing and using the *Hadedea Island Big Book* within the context of Share-Net and the RNCS 1st Principle. To deepen insights and experiences into the *Hadedea Island* case study, three schools in the KwaZulu-Natal Midlands are considered and, more particularly, two Grade 4 classrooms within each of these schools: Mrs Oftebro and Mr Sliedrecht at Epworth School, Mrs Bulcock and Mrs Bullock at Howick Preparatory School and Mrs Ntshingila and Mrs Taylor at Nogqaza Primary School. The distinct practices in each classroom are recognised as arising from the teachers' and learners' unique characteristics.

Figure 3.1 represents each case as 'embedded' within the wider case because the activities of six individual classrooms (one multi-dimensional level of case study) need to be understood within their particular school context (another level of case study). In this way, the cases' evidence influences emerging insights into the broad case of the *Hadedea Island Big Book's* development and use, and none can be fully understood without interaction with the others.

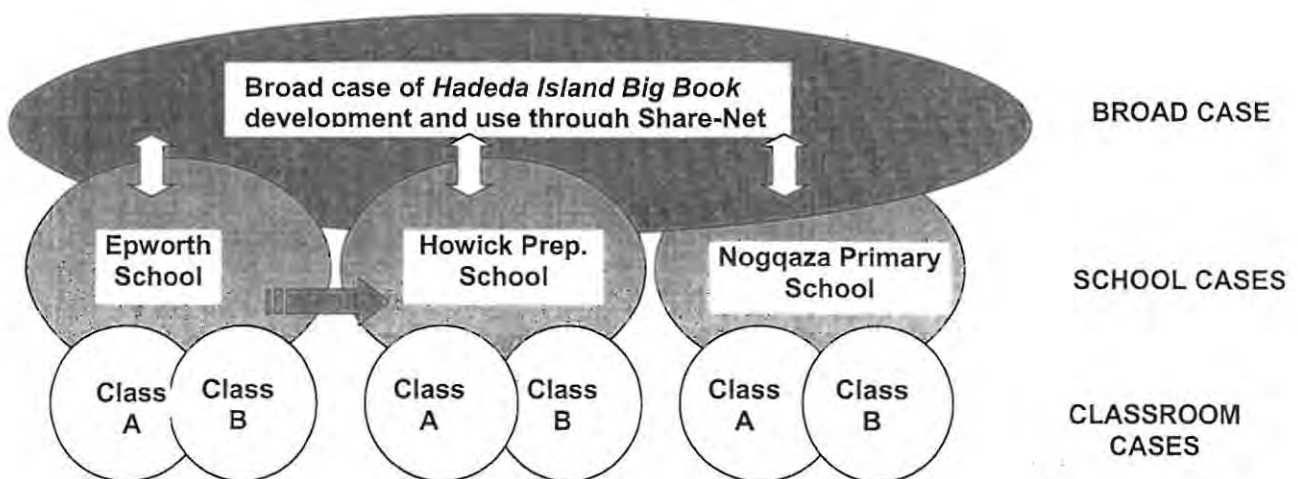


Figure 3.1 Diagram showing the multiple cases in this study, and their embedded nature and interactions with one another.

Yin (1994) describes case study as empirical inquiry best suited to the researcher wanting to consider the study's contextual conditions. A case study approach is also well-suited to producing concrete, context-dependent knowledge which is, as Flyvbjerg (2001) suggests, the most that social science can offer. Flyvbjerg (*ibid.* :72) explains that case studies' closeness to real-life situations and their wealth of details allows for "...the development of a nuanced view of reality" and for the development of the researchers' own skills and understandings through concrete experiences.

From these descriptions, I recognise the advantages of using a case study approach to probe this study's research question, and to inform future work-related judgements and decisions (Bassey, 1999). Yet, as Stake (1995) points out, case study is more concerned with particularisation than generalisation, providing interpretive insights in that unique context. Using observations and experiences of one set of developing learning support material trialled in three schools, I cannot make assertions about how environmental learning support materials can or should respond to curriculum requirements in South African classrooms. However, inferences can be made by knowing this particular case very well, allowing its own particularity and complexity to emerge so that it can come to be understood "...within important circumstances" (*ibid.:xi*) that characterise the case across the diverse contexts of teaching and learning within the school system.

Interpretation of the case is inevitably fundamental to such a research process but should not, cautions Stake (*ibid.:33*), "... hasten to draw conclusions". He proposes, "... good case study is patient, reflective, willing to see another view of the case".

Having established confidence in the appropriateness of a developing case study approach for this study, I concerned myself with identifying its weaknesses (Bassey, 1999; Cohen *et al*, 2000) and where possible, avoiding these. A lack of rigour in gathering information would undermine the entire study's reliability, and the very nature of case study could make the findings difficult to crosscheck. Further issues such as my subjectivity as researcher and methods of selecting information according to bias or predetermined expectations could undermine the trustworthiness of the findings. I discuss these issues and validity threats in more detail in Section 3.6.

Such perspectives on the nature and strengths of case study had implications for the selection of information-generating techniques and approaches to presenting and interpreting this information in order to probe the research question and to inform the developing resource. An elaboration of these techniques, and the process within which they were used, is provided in Sections 3.4 and 3.5.

3.4 METHODS OF GENERATING INFORMATION

3.4.1 Introduction

A multi-method approach has been used in this study to generate evidence within which the developing stories might be told and interpreted. The diversity of these methods has allowed for a triangulation of the findings during each interpretative phase. In the context of interpretive research, triangulation is unlikely to produce convergent findings that lead to clear consensus and resolution; instead it tends to provide a richer, more complex picture of a social phenomenon (Mathison, 1988). In line with this, Knight (2002:127) observes that, "...social phenomenon are coloured by context,

[and] chameleon-like they change". He thus recommends that triangulation is used to produce "...more complex accounts..." rather than "...greater certainty" (*ibid*) and Stake (1995:134) recommends that it be used "...to minimise misperception and the invalidity of our conclusions".

This view of triangulation as a developing picture of richness and complexity is concordant with the overall design of this study that acknowledges the multi-dimensional contexts of each layer of the developing case. It therefore does not strive to provide definitive solutions or recommendations, but attempts to embed the findings within the research process and its subjectivities. This, according to Mathison (1998), makes it my responsibility (as researcher) to *construct* plausible explanations of the social phenomena from which the findings are derived.

Section 3.5 discusses how these 'plausible explanations' came to be constructed. Preceding that, Sections 3.4.2 - 3.4.8 present the information-generating methods used during interactions with Epworth School, Howick Preparatory School and Nogqaza Primary School. These are: record-keeping and a reflective journal; annotated photographs; videoed lesson extracts; teachers' profiles and lesson planning; evidence of learners' work; teachers' reporting templates on using the materials; and semi-structured interviews.

3.4.2 Record-keeping and Reflective Journal

Hitchcock and Hughes (1995) note that research diaries are an excellent means of recording teacher-learner interactions, lesson activities and various other classroom details. The case diary may also become the source of "analytical reflections" (*ibid*.:296), thereby serving as a reflective journal in which the researcher records emerging issues, axes of tension and topics for clarification.

I used a research record book for both purposes (of recording logistical issues and sustained reflections) from October 2002 to August 2003 (see Appendix I). The approximately 200 pages of notebook entries briefly document discussions, dilemmas and decisions related to the initial development of the *Hadedda Island* project, clarification of the research process, summaries of classroom interactions and notes on related theoretical topics.

The journal as a record-keeping tool contains facts central to the narration of each case such as dates when schools were visited and the sequence of events. Immersed within the records are reflective comments. These were useful in stimulating deeper questioning of pertinent issues, shaping understandings with regard to the RNCS 1st Principle and the ongoing development of the *Hadedda Island* materials.

3.4.3 Annotated Photographs

Walker (1993) and Hitchcock and Hughes (1995) consider the irony of social science research's struggle to force ideas into words despite existing in a culture that is increasingly visually orientated. Photographs are often added to written texts as 'optional extras' despite their power to stimulate interest and interaction. Walker (*ibid.*:83) describes photographs as "keys to memory" which, when we discuss them, help us "...to construct or reconstruct shared memories".

Hitchcock and Hughes (1995:309) state that the visual image "...is of significant value as a display of culture" and Walker (1993) notes that the interpretation of photographs is a cultural act that can give the researcher insights into how individuals have created meaning. Consequently, the photographs referred to in this study intended to produce visual narratives that could articulate with the written narratives, thereby broadening understandings of the teaching and learning experiences. Selected photographs were also used to support teachers' in reflecting on and narrating the events portrayed in the images. Some of these reflections are used to annotate photographs in Chapters Four and Five.

Photographs are precise in that they can record with a high degree of accuracy the physical characteristics of a moment. This precision, however, does not necessarily produce a record of reality: photographs can be 'staged' and the selection and framing of the subject can portray an event in different ways (Knight, 2002). The presence of a camera may also influence people's reactions (Hitchcock & Hughes, 1995), thereby increasing the chances of misrepresenting the event under scrutiny. No claim can therefore be made to a photograph's ability to 'prove what happened'. Consequently, the photographs used in this study only aim to enrich the reader's understandings of each school and classroom's distinct identity and provide a platform for the teachers' voices to be presented.

The photographs used in this study were gathered in three different ways. (i) Some were taken by me during visits to classrooms. These were taken with minimal disruption to classroom activities, with the exception of some photographs at Epworth School when learners posed after the lesson with examples of their work. (ii) Other photographs were produced after the information-gathering phase by selecting stills from digital video recordings of lessons. These photographs were selected by me for their usefulness in illustrating or clarifying aspects of emerging findings of the study. (iii) The remaining photographs were taken by the teachers themselves after I gave both schools in the trial phase a disposable camera to document classroom activities in my absence. The teachers were asked to take photographs of key stages or significant incidents that they considered important for describing how the *Hadeda Island Big Book* was used in their class. This category of photographs attempts to give greater voice to the teachers' accounts and perceptions of the experiences. A

selection of these photographs was later given to the teachers to annotate, and these annotations appear with the photographs in this report.

3.4.4 Videoed lesson extracts

During the pilot phase of the *Hadedda Island Big Book* at Epworth School, several lessons or extracts thereof were recorded on digital video. Both teachers at Epworth School reported that having a camera in the classroom was initially distracting [what Cohen *et al.* (2000:313) refer to as "reactivity"] although they and most learners soon became engrossed in the lesson and were no longer so conscious of it (TI-ES2). Mr Sliedrecht described his learners as "definitely hyped" (*ibid.*) when the lesson was being recorded but the camera did not alter the overall content or direction of the lessons. He added that several usually quiet learners became animated, whilst Mrs Oftebro reported that one of her usually lively learners "physically withdrew from the whole process" (*ibid.*).

Limitations of this method for the purposes of this study included sound-quality and flexibility. The sound quality was adequate for general record-keeping purposes yet too poor to enable accurate transcription of the subtleties of classroom conversations. The tripod-mounted camera, usually positioned on a table to provide an elevated view of the subject, offered a fixed view of one section of the classroom only. Moving the camera to keep track of various activities required the camera operator to stand on a chair and manoeuvre the camera which was distracting for the teacher and the learners. Thus, the potential intrusiveness and time / cost implications of this method of information-gathering outweighed the perceived benefits of the quality of information it was producing in relation to the research question.

Consequently, the decision to use digital video recordings of classroom interactions method was reconsidered and significantly streamlined for the trial phase. At Howick Preparatory School and Nogqaza Primary School, only one 20-minute recording of a lesson was made per school. A date and time was negotiated with the teachers in advance and approximately 20 minutes of the arranged lesson were then recorded. This approach made the gathering and interpretation of video data significantly more manageable but in no way reduced the potential to distract learners or unsettle teachers. Although two of the six participating teachers showed and reported no anxiety or changes to their regular teaching practice, others reported and / or demonstrated disruption (TI-ES2; TI-HP). One teacher relocated her class to another venue for the lesson and reports that it was "...one of the worst lessons of [her] life" (TI-HP). Another teacher rearranged the classroom for the lesson so that learners were all seated in small groups with no desks as these were pushed to the side of the room (RJB). Another class appeared to have been coached by their teacher, participating in a smooth-running lesson in which all questions were quickly and correctly answered, complete with actions and imitations of bird calls (RJB).

The method of using digital video to record lessons was experimental in this study, due to the original intention of using computer software to categorise and interpret the data. However, in the light of the emerging practical issues discussed above and technical difficulties with the software, it was decided to use the video recordings from all three schools only as memory-aids for verification purposes and not for more in-depth analyses of teacher / learner / materials interactions. It seemed unfeasible and inappropriate to base findings and recommendations on video data that lacked the depth necessary for an authentic examination of the social complexity of the visual experience.¹ Nonetheless, I have included a detailed description the process of producing the video recordings because, although they have not been used as information sources, the presence of a video recorder in the classrooms was a (sometimes dominant) part of my interactions as researcher. The experiences might also offer guidance or a starting point for future studies that intend to pursue this medium.

3.4.5 Teachers' profiles, supplementary questionnaires and lesson planning

Each teacher participating in the study completed a 'Teacher and Classroom Profile' and 'School and Community Profile', based on earlier templates used in the 2000 National Environmental Education Programme Pilot Research Project (Lotz-Sisitka & Raven, 2001) (see Appendix G). Once completed, these documents were valuable in compiling each school's and teacher's contextual profile, which in turn provided the backdrop for interpretation of each case's information.

In some instances, teachers' responses were too brief or the profiles' questions were inadequate. Also, both pairs of teachers at Howick Preparatory School and Nongqaza Primary School appeared to have collaborated when completing their profiles. The duplicated responses thus reduced the richness of information available to me and some issues remained under-developed. Consequently, I submitted an additional list of shorter, very specific supplementary questions to the teachers for them to provide finer details that enabled me to write a more comprehensive profile of each school (See Appendix J).

The six teachers were also requested at the start of the study to make their daily or weekly lesson plans available on completion of the *Hadedda Island* learning programme. In an attempt to avoid burdening the teachers with extra tasks and to minimise disruption to their regular teaching practice, they were not given separate learning programme planning templates to complete, and I anticipated that they would present their planning in the format they regularly used. However, on completion of the *Hadedda Island* trial phase (Phase Three), few teachers were able to provide a formal or

¹ Hitchcock and Hughes (1995:310) emphasise that an audio-visual recording is much more complex than being merely a direct, indisputable record of an event. Appropriate methodological and analytical decisions should therefore be made in recognition of the extent to which culture, age, gender and ethnicity shape our visual experience. Considerations of this nature and depth would go beyond the scope of this study.

adequate record of the curriculum activities. In these cases, it has been necessary (and adequate) to rely on the combination of interviews, learners' work and observations to inform the study's findings.

3.4.6 Portfolio of learners' work

At the end of the Phases Two and Three, samples of learners' work were collected and interpreted in relation to the teachers' planning and their verbal account of the teaching / learning activities, my classroom observations and the video record of selected lessons. When collecting learners' work from the teachers, I did not request the representation of any particular ability, gender or cultural ranges as the work samples were to be used only to determine what type of curriculum activities transpired, not *how* such work had been performed by various members of the class. Consequently, the workbooks and activities referred to in the study are taken from a random sampling of learners' work.

Appendices K,L and M present samples of work produced by learners of the three schools. These were referred to during Phase Four's interpretation processes and were helpful in constructing a richer picture of what had transpired in each classroom around the *Hadedea Island Big Book*. I also found that having access to learners' work helped to provide a more honest (re)presentation of the experiences. By this, I do not suggest that teachers' accounts or my observations were 'dishonest', but rather that teacher / materials developer / researcher interactions are often based on wider perspectives, ideals and goals, and that direct evidence (in the form of learners' work) can reveal the practical successes or limitations of an activity.

3.4.7 Reporting templates

I requested each teacher to complete a two-page reporting template on the use of the *Hadedea Island Big Book* (see Appendix H). This template was given to teachers towards the end of their work with the materials and was intended to give me a general indication of their experiences so as to guide the development of questions for the final interviews. It was also helpful in preparing teachers for the type of reflections I was likely to draw on during the interviews.

3.4.8 Semi-structured interviews

During Phase Two with Epworth School, two semi-structured interviews were conducted: one at the start of the classroom-based pilot-testing and the other on its completion. During Phase Three, one semi-structured interview per school was conducted on completion of their learning activities with the *Hadedea Island Big Book* (see Appendices N and O).

The content of these interviews has contributed significantly to the findings and recommendations of this study. The interviews' semi-structured nature (Hitchcock & Hughes, 1995) provided sufficient structure to elicit responses that informed the research question, yet its flexible nature allowed both interviewer and interviewee to pursue emergent issues. The interviews thus created opportunities for the participating teachers to share their experiences and perspectives and contribute to the ongoing development of the *Hadeda Island* materials.

In all the cases, specific guiding questions were prepared, but during the interviews these were often reworded, re-arranged or occasionally even omitted, depending on how the interviewees' responses shaped the interaction (Vockell & Asher, 1995:199). All interviews were conducted in pairs with the two participating teachers from each school. This supported a more natural, conversational flow and generally led to richer, more revealing discussions as comments sometimes stimulated supportive or opposing responses from the other teacher.

3.5 CONSTRUCTING A FABRIC FROM EMERGING TRENDS

3.5.1 First layer of interpretation

Knight (2002:182) cautions that when qualitative data is looked at with a research question in mind, "... it is easy to see only what is obviously relevant to those perspectives". With this in mind, and whilst I was reluctant to impose pre-determined categories on the process of interpreting the information, it became clear that an initial broad framework was needed to guide my interactions with the wide range of information before me. From the experience of conducting the fieldwork and of familiarising myself with the information in the light of the research question, I derived the following eight preliminary categories to organise the information into broad areas of interest:

- Developing and improving the learning support material
- Teachers' Use of the learning support material
- Teacher support and professional development issues
- Assessment
- Curriculum / Department of Education issues
- Learner participation / relevance of the learning support material to learners
- Contextual / logistical issues
- The research process and my role as researcher

These preliminary categories were intended to be sufficiently general to allow both anticipated and unforeseen findings to emerge. Knight (*ibid*: 185) refers to these as "the 'bags' into which you'll place material to think about and interpret later". These were also broad enough to allow sub-categories to develop which could, in turn, lead to a redefinition of the preliminary categories.

Using the constant comparative method, described by Glaser & Strauss (1967:105), as a guide, I reflected on and compared these emergent categories and identified key trends and issues. Working with these categories, I coded the interview transcripts, teacher-planning pages, the *Hadeda Island* reporting template and my research journals using coloured stickers, each colour representing a different category. A jotter was allocated to each category so that as I coded the information, I could transfer that selected evidence into the relevant book. Other sources of information less well-suited to colour-coding (photographs, videos, teacher and school profiles and samples of learners' work) were not coded using coloured stickers but were scrutinised before descriptive notes were made in the corresponding categorising jotters. By the end of this process I had eight books, each containing selected and focused information to be further interpreted in the second layer of interpretation.

3.5.2 Second layer of interpretation

The preliminary categories, as described previously, were essential in managing the wide range of information. However, this broad scope that documented the entire materials development and pilot-testing process, did not allow the study's specific focus on the RNCS 1st Principle to be foregrounded. I realised that I would need to take "a creative leap" (Bassey, 1999:70) from these categories into more specifically focussed areas for discussion on the interface of learning support materials, classroom practices and the RNCS 1st Principle.

Reading through the categorised information in the eight jotters, I then began to draft analytical statements (*ibid.*) that would give form to discussions around the study's research question. I started with four broad analytical statements:

- Design features of the *Hadeda Island Big Book* are generally suitable for the material's intention to stimulate environmentally focused teaching and learning;
- Socio-historical and economic factors strongly influence the use of the *Hadeda Island Big Book*;
- Teachers' understandings of curriculum create both challenges *and* opportunities in working with learning support materials in the new curriculum;
- There are many layers of complexity in this study, most especially in the areas of teachers' understandings of the RNCS 1st Principle, the concept behind the *Hadeda Island* materials and its multi-layered text.

Two further issues for analysis emerged, although they were best articulated as questions:

- What emergent findings could guide refinement of the *Hadeda Island Big Book* so as to strengthen environmental learning in the curriculum?
- What emergent findings could guide interactions with teachers?

These analytical statements and questions formed the backbone of my early drafting of a discussion of the study's findings. As their foci overlapped generally with the eight preliminary categories described above, I was able to apply the already-coded information to these statements and questions, and then complete another 'sweep' of the information (such as in the research journals, interviews and teacher profiles) to find additional supportive evidence. Satisfied with the potential of these analytical statements to bring out my emerging insights around the research question, I commenced writing further drafts of the discussion. Chapter Six, which presents the final stage of this process, reflects these analytical statements and questions according to a reviewed structure that endeavours to articulate with dimensions foregrounded in Chapter Two.

3.6 AUTHENTICITY, INTEGRITY AND RIGOUR

The point of the process, in short, is 'authenticity' – to enable teachers to voice honestly and truthfully their perceptions of the events that occurred in their classrooms. Such truths leave room for the irreducible complexity of classroom practice while yet offering penetrating, important insights into teachers' experience of it.

O'Dea (1994:167)

O'Dea's description goes a long way towards identifying the key elements of authentic and trustworthy research, several elements of which are reflected in this study. The methods used here to generate, describe and interpret the information (see Sections 3.4.1 – 3.4.8 and 3.5) support the intention to locate the study within "... the irreducible complexity of classroom practice..." (*ibid.*) and enable teachers to contribute honestly to its findings.

Cohen *et al.* (2000:105) recognise "...honesty, depth, richness and scope of data achieved, the participants approached, the extent of triangulation and the disinterestedness or objectivity of the researcher" as contributing to the validity of qualitative research. They add, however, that threats to validity and reliability can never be entirely erased and "...at best we strive to minimize invalidity and maximize validity" (*ibid.*).

Working within an interpretivist genre in a contextually located study (see Section 3.1), I endeavoured to "maximize validity" (*ibid.*) and strive for authenticity (O'Dea, 1994) by giving attention to the following:

- o Choosing information-gathering methods well-suited to the study's orientation, context and research question (Hitchcock & Hughes, 1995) (see Sections 3.4.1 -.3.4.8);
- o Allowing teachers' voices to emerge in the study's discussions, findings and conclusions, especially through quotations and participant-annotated photographs (see Sections 3.4.3);

- The use of thick descriptions (Cohen *et al.*, 2000) which aim to "...become the eyes, ears, and perceptual senses for the reader ... [by being] ...factual, accurate, and thorough" (Patton, 2002:23);
- Taking cognisance of the socio-political / socio-economic contexts of the embedded case studies (see Section 2.2), and presenting emergent findings in the light of this;
- Strengthening my self-reflexivity as researcher by working thoroughly through the unprocessed information, especially the journal entries and interviews. Through this, I could trace how earlier assumptions had been verified or challenged, and how early suggestions and plans had grown or dwindled depending on subsequent experiences;
- Presenting the research process, information and findings in as naturalistic, clear and traceable a way as possible (Cohen *et al.* 2000). Findings and conclusions are supported throughout by cross-referencing to original information sources, namely interview transcripts, the research journals, school and teacher profiles, photographs and learners' work;
- Using respondent validation (Hitchcock & Hughes, 1995; Cohen *et al.*, 2000) to strengthen the trustworthiness of each account;
- Triangulation of methods and findings to construct more complex and revealing accounts of the cases (Mathison, 1988) (see Section 3.4.1).

3.7. ETHICAL CONSIDERATIONS

On commencement of the study, access to each school and classroom was negotiated in various ways. Due to a professional connection with Epworth School and consequent familiarity with the staff, arranging to work with the Grade 4 teachers was an informal process (a phone call to one teacher and a brief conversation with the school principal when I first visited the school to commence the pilot testing phase). As an independent school, further formalities were not required.

Access to Howick Preparatory School and Umgeni Primary School (both government schools under the management of the KwaZulu-Natal Education Department) was negotiated more formally. After a visit to the local district office and a series of phone calls, emails and faxes, permission was granted by the Provincial Office for a small-scale research project to be undertaken in two local primary schools, on condition that such research did not disrupt teaching or remove teachers from classrooms during teaching hours (see Appendix P). Parallel to obtaining this permission, access to the Grade 4 classes and their teachers was negotiated with the principals of both schools. Both principals were in favour of the study and were fully supportive of my proposed interactions with the teachers and learners.

Acknowledging the demands of daily teaching practices and the time constraints under which most teachers work, I endeavoured to give teachers adequate notice of my intention to visit their lessons or conduct an interview. I made frequent unscheduled visits to the schools to deliver pages, collect

photographs etc., but always negotiated formal meeting times and lesson observation times several days before.

All three schools participating in the study received a complementary copy of the *Hadedda Island Big Book* and the *Wild About Birds* support pack. A commitment was also made to provide each school with the refined version of the *Hadedda Island* learning support materials (the *Big Book* and accompanying teacher support materials) when these are completed and made available through Share-Net.

3.8 CONCLUSION

This chapter has drawn attention to the contextually embedded nature of the study and the importance of an appropriate research design that can allow its multiple strands (of historically situated practice in a time of transition) to be revealed. Located within an interpretive tradition, the research process' design as a story-telling case study has been considered and the importance of selecting suitable methods of generating information has been emphasised. The chapter has also described the overall process in which these methods have been employed, from Phase One in which the *Hadedda Island Big Book* was conceptualised and drafted, to Phases Two and Three in which the materials were used in three local schools, and Phase Four in which the generated information is interpreted and discussed. The following Chapter Four describes Phase Two, the process of developing the draft version of the *Hadedda Island Big Book* and piloting its use in two Grade 4 classrooms at Epworth School.



Chapter Four

Courtship: Phase One's Early Development and Piloting of the *Hadedra Island Big Book*



*... within the first week there were ornaments
coming from home, feathers and stories everyday
this long about birds ... and that kind of took
them into the whole fantasy world, fantasy IN
reality, and then using THAT as the democracy.*

Mr Sliedrecht,
Epworth Primary School,
2003.

4.1 INTRODUCTION

This chapter describes how the initial concept of *Hadedea Island* was adapted and developed through Share-Net, in partnership with staff of the RUEEU, the artist, other environmental education practitioners and the Grade 4 teachers and learners of Epworth School.

Epworth School was identified as a potentially good site to pilot the *Hadedea Island Big Book*. Having previously taught at Epworth High School for several years, I was familiar with the staff and the school's ethos. Having confidence in the principal's and staff's commitment to OBE and C2005, my intention was to work with the Grade 4 classes as a creative sounding board to explore some of the *Hadedea Island Big Book's* potential. This would guide subsequent materials design decisions and broader issues such as curriculum activities and teacher support strategies which would be further considered during Phase Two when the materials were used in two other local schools.

4.2 SHARE-NET-BASED DEVELOPMENT PRIOR TO PILOTING THE DRAFT MATERIALS

4.2.1 Early planning and conceptual clarification

The first planning meeting to clarify roles and a possible direction for the *Hadedea Island* project was held in the RUEEU on October 30, 2002. Little conceptual work had been done on the project up to this point, especially with regard to design, content and curriculum alignment. An artist, Richard Kilpert, had recently been secured for the project, the *Hadedea Island Big Book* had been identified as the starting point for the work in schools, and my role as researcher with a focus on the materials' articulation with the RNCS was beginning to be clarified.

Key design issues of the *Hadedea Island Big Book* and other general considerations that emerged from the initial planning are summarised below as evidence of the scope of elements that need to be considered in such work (RJA). (Appendix Q presents a more detailed report of the meeting.)

- o The aim of the project was summarised as 'piloting activities for the new curriculum'.
- o The materials needed a South African identity. This would be achieved through the adaptation of the *Cockatoo Island* text, the selection of South African habitats and choice of the book's title.
- o *Cockatoo Island* lacked references to human habitats / influences on the natural environment. Group consensus was to "include 'Urban Areas' as a habitat, due to the commonness of this habitat" (RJA). This could also support classroom activities focusing on a broader understanding of environment. Artwork would thus reflect human artefacts where appropriate.

- o The research focus was clarified as being on the RNCS Principle Statement, in particular the 1st Principle.
- o The challenge of using materials in multilingual classrooms should not be overlooked, although this was likely to have greater implications for the overlapping development of Foundation Phase materials.

During subsequent interactions, O'Donoghue (2002, pers. comm.) pointed to the distinction between *Cockatoo Island's* role in preparing learners for a field trip to the Australian Houses of Parliament, and our intention to develop curriculum materials that would support the type of teaching and learning advocated by the RNCS 1st Principle. This distinction would require more than just a superficial alignment of *Cockatoo Island* with South African habitats and bird species but a careful adaptation of the material at every level.

Early in the development process, the role of fantasy was recognised as being central to the materials' effective use in classrooms (O'Donoghue, 2002, pers. comm.). The assumption was that, through immersion into the fantasy of an "island-in-the-sky-land" (see Appendix A), learners would be freer to consider issues of social justice, respect and democracy, as well as to exercise their decision-making skills. After considering such issues in the freedom of an *imaginary* world, learners would be encouraged to return to their real world and reconsider issues and challenges in their *local context*, be it in the classroom, home or community (Olvitt, 2003). It was thus essential that early design decisions, especially with regard to text and illustrations, strengthen this interplay between the fantasy on *Hadedda Island* and the reality in learners' own context¹.

4.2.2 Shaping the written text

The text of the *Hadedda Island Big Book* was developed with an emphasis on rhyme which was not a feature of the Australian *Cockatoo Island*. From earlier discussions with Jean Ward of the University of Natal, Pietermaritzburg (Ward, 2002, pers. comm.) about the development and use of the READ Educational Trust's Big Books², it became evident that rhyme was a particularly useful tool with young learners and especially in second language learning contexts. In the early stages of development, I referred frequently to READ's Big Books for guidance with regard to styles of

¹ The book's illustrations were recognised as playing a crucial role in establishing the identity of *Hadedda Island*, stimulating engagement with the material and supporting the transition back and forth between the imaginary and the real contexts. The initial sketch of a bird's eye view of the island (produced in December 2002) was criticised for being too detailed and realistic, allowing little room for the metaphorical island's identity to emerge during classroom activities. This draft was reworked to portray a more stylised island, the form of which was partially obscured by foreground and middle-ground clouds (see Appendix A). However, oversimplification of the island, especially in black and white, was criticised by teachers, colleagues and myself as being indistinct and unappealing. Towards the end of 2003, Kilpert reworked the illustration to retain the clouds and sense of fantasy whilst using more tonal variation to distinguish between different habitats and land formations.

² The READ Educational Trust develops Foundation Phase readers to promote reading skills and enjoyment of reading in South African Schools. Their resources are characterised by their large sizes (from A3 to A2). These 'Big Books' are accompanied by smaller teacher guides (Ward, 2002, pers. comm.).

illustration, verse, font and overall layout. Digital photographs of these books were emailed to Kilpert to stimulate further ideas and options regarding the artwork.

Vocabulary was given careful consideration in terms of its appropriateness for Intermediate Level teaching. For the majority of learners who may experience the *Hadedea Island Big Book* materials, English is a second or even third language. For this reason, several changes were made to the original Australian text of *Cockatoo Island* which was intended for mainly English-speaking children. The length and complexity of words were considered and sometimes revised so that the *Hadedea Island* story would remain accessible to all learners whilst stimulating vocabulary development.

Only through practical classroom-based use of these early draft materials would the strengths, weaknesses, tensions and ambiguities of the *Hadedea Island Big Book* begin to emerge. It was thus essential to commence interactions with the Grade 4 teachers at Epworth Primary School as early as possible.

4.3 THE CONTEXT OF EPWORTH PRIMARY SCHOOL

4.3.1 The school's ethos and socio-economic background

Epworth School is an independent school located in a middle-upper income suburb of Pietermaritzburg. The school, over 100 years old, caters for Grade R to Grade 12. The pre-primary, primary and high schools are situated on the same campus, sharing common facilities such as the school hall, swimming pool and the tennis and squash courts, but having separate principals, academic staff and teaching sites.



Figure 4.1 The front entrance of Epworth Primary School showing well-maintained, secure premises and murals painted by learners.

Epworth Primary School admits boys and girls but, because the High School's policy of admitting only girls has led to a common perception that the whole school is a 'girls only' school, the Primary School's intake of boys is low in comparison to other local co-educational primary schools (168 girls: 78 boys) (SQ-ES1).

Epworth School traditionally adheres to a Methodist ethos and places a strong emphasis on family support and community involvement. The school is also recognised in the local educational community for its inclusive policy, frequently accepting children with learning and social difficulties, and for its commitment to implementing OBE and C2005.

4.3.2 Participants in the pilot phase: two teachers and their classes

Mrs Oftebro is a university-qualified teacher (B.A, HDE) who has been teaching for 18 years (TI-ES1). At the time of the case study, she was teaching a Grade 4 class of mixed ability learners at Epworth School which is her first experience of teaching such a young age group. Mrs Oftebro is responsible for teaching all the relevant Learning Areas although the school has specialist drama and computer teachers.

There are 15 learners in Mrs Oftebro's Grade 4 class whose average age is 9 years (TP-ES1). It is a mixed ability class with abilities ranging from severe remedial difficulties to 'A' grade learners. Many learners have supportive parents who encourage the children's interest in sports, hobbies and nature (SQ-ES1). Many are able to travel widely in South Africa during school vacations (SQ-ES1) and this enables them to share experiences with their peers and build on their prior knowledge³ (RJB).

Mrs Oftebro describes the Grade 4 learners as being interested and responsive to all themes they cover in class (SQ-ES1) and also describes the typical learner at Epworth Primary School as "confident" and "boisterous" (RJB).



Figure 4.2 Interior of Mrs Oftebro's Grade 4 classroom showing the well-resourced classroom environment and the arrangement of tables to support group work. (Sourced from digital video)

³ For example, during the pilot phase of *Hadedda Island* when habitats were being studied, three learners had previously visited the Karoo with their families and were able to describe the area to the rest of the class (RJB).

Epworth School encourages its teachers to participate in professional development courses. Over the past few years, Mrs Oftebro has participated in several workshops, run either by specialist groups or the education department. These include workshops on creativity, emotional intelligence, cognitive thinking and HIV/AIDS in schools. Other 'in-house' workshops were organised and run by the school's management team, and the whole primary school staff meets on a weekly basis for a 'staff development' meeting (TP-ES1).

Mrs Oftebro cites Howard Gardner's multiple intelligences (TP-ES1) as a main approach she uses in her teaching⁴. This requires a focus on "...developing both the strengths and weaknesses of each learner in as individual way as possible" (TP-ES1). She adds that her emphasis is "...very much on skills and appropriate and meaningful experiences" and that she places "...far less emphasis on content and formal testing at Grade 4 level" (TP-ES1). The teaching / learning materials Mrs Oftebro uses most regularly are worksheets, the white board, computers and art materials (TP-ES1).

Mr Sliedrecht is in his first year of teaching and also holds a university teaching qualification (B.Soc.Sci and PGCE) (TP-ES2). During his PGCE (Post-graduate Certificate in Education) year, he was part of an Education, Training and Development Programme level six learnership (SQ-ES2). Like Mrs Oftebro, Mr Sliedrecht is responsible for teaching all Learning Areas to his Grade 4 class (TP-ES2). He also teaches Grade 6 mathematics and has heavy sports coaching commitments in the school (TI-ES1). His Grade 4 class, also participants in this study, has 17 learners, the profile of which is very similar to Mrs Oftebro's, outlined above (SQ-ES2).

Mr Sliedrecht believes that "...learners learn by doing and learn by experiencing" (TP-ES2) and he therefore tries to use sensory, practical, hands-on teaching methods. To support him in this, he makes frequent use of textbooks, media and other materials developed by himself or colleagues. Mr Sliedrecht is positive about OBE and describes it as "...an approach that focuses on skills, values, attitudes and knowledge acquired through the learning process rather than emphasising the content" (*ibid.*).

4.3.3 A progressive educational approach

The previous Principal of Epworth Primary School was a passionate advocate of Howard Gardner's theory of multiple intelligences (see Section 4.3.2) and this orientation remains dominant in the school, although it is now less overt than in previous years. There is a strong emphasis on educating

⁴ Gardner, in breaking from traditional theories of intelligence, proposed that all people possess a broad range of intelligences (linguistic; logical-mathematical; spatial; bodily-kinesthetic; musical; interpersonal and intrapersonal), at least one or two of which are more prominent. Traditional schooling systems foreground the academic intelligences, often resulting in learners' strengths remaining unrealised, poor academic performance and low self-esteem. Educators should, argues Gardner, create opportunities for learners to learn through their strengths in order to flourish emotionally, cognitively, socially and even physically (Campbell *et al.*, 1996).

'the whole child' and building each learner's sense of self-worth by focusing on individual talents and interests.

The current Principal, John Mathfield, has played a key role in the Department of Education's development of OBE and C2005. From March to May 1997, he chaired the National Technical Committee for Curriculum 2005 which compiled the original document for introducing OBE in South Africa. Since then he has been representing independent school education on various provincial and curriculum committees. Consequently, Epworth Primary School has been a fore-runner in OBE and C2005 implementation.

Mrs Oftebro and Mr Sliedrecht describe their principal as "...very supportive..." of curriculum changes in the school (TP-ES1). Mrs Oftebro reports that, as part of whole staff development over the past few years, she has "...worked extensively on understanding OBE, structure, background, strengths, weaknesses and implementing OBE" (TP-ES1). As a staff body they have "...looked closely at the changes that have occurred over the past few years ... [and] ... have used many of the criteria in the developing and updating of our curriculum" (TP-ES1; TI-ES1).

4.3.4 Environmental learning in the school

Both Mrs Oftebro and Mr Sliedrecht describe Epworth Primary School as "...actively involved in environmental education (TP-ES1; TP-ES2). This is integrated mostly in the Learning Areas of Natural Sciences, Human and Social Sciences and Life Orientation (TP-ES1). Mrs Oftebro describes how the Grade 4s have studied 'Rainforests', 'Dinosaurs', 'The San (Bushmen)' and 'Space' as typical Grade 4 themes. She cites "relevance to lives", learners' interest levels and current affairs / topical issues as guiding factors when choosing these themes (SQ-ES1). "[We] encourage pupils to explore, experiment and research on their own after providing them a platform" (TP-ES1). The school is a registered Eco-School, is involved with a school award system run by the Keep Pietermaritzburg Clean Association, and each year learners participate in PINSSA (Pietermaritzburg and Inland Natal Schools Science Association) "... with special emphasis on environment" as a category (TP-ES1). Learners also get involved with the school's recycling activities (*ibid.*).

In terms of environmental learning, Mrs Oftebro recognises local, national and global pollution as issues she confronts within her classroom context, and identifies pollution in the nearby Duzi River as a local environmental issue. She considers "...awareness in the community" to be important in establishing a healthy local environment (TP-ES1).

Mr Sliedrecht cites the "...use of water, municipal and borehole, as well as the drainage of such water" as a pertinent environmental issue in or near the school (TP-ES2). He reports that he incorporates environmental learning into his curriculum planning through aspects of theme work, for example the making of bird feeders. Sometimes activities related to other Learning Areas are

conducted outdoors. He sees the need to "...remould attitudes towards various topics (such as environment) while developing positive, proactive individuals" (TP-ES2). He believes that "... [p]eople need to realise and understand the importance of a healthy environment" and that "... active participation of all concerned... " is needed before a healthy environment in / near the school can be realised (*ibid.*).

Both teachers identify several learning support materials and facilities available at the school to enhance environmental learning. These include a science garden⁵, access to the High School's laboratories, the Primary School's collection of microscopes, and field aids such as butterfly nets and fishnets. The newly-established "outdoor classroom" (TP-ES2) is an experiential, sensopathic learning environment that provides climbing apparatus, indigenous plants and landscaping to stimulate enquiry and interaction with nature (SQ-ES1).

Mrs Oftebro also identifies the adjacent University of Natal campus as a support for / source of environmental learning (TI-ES1). Other than this, neither teacher is able to identify other centres or non-government organisations that can support the school with environmental learning.

4.4 TEACHERS PLAN AND IMPLEMENT A LEARNING PROGRAMME

4.4.1 Early teacher-researcher interactions and planning

My knowledge of Epworth School and a five-year acquaintance with Mrs Oftebro facilitated early interactions and planning around the *Hadedea Island Big Book*. Also, Mr Sliedrecht, newly qualified and in his first term of teaching, appeared very interested and motivated to participate in the pilot phase, and was familiar with and supportive of the RNCS.

The first meeting took place between Mrs Oftebro and me on January 6, 2003, before schools reopened for the academic year. This discussion focused on introducing the *Hadedea Island* concept and considering how best it could be used with the Grade 4 class. At this stage, the *Hadedea Island Big Book* did not yet exist and I was only able to show Mrs Oftebro some colour plates from the Australian *Cockatoo Island* books.

Mrs Oftebro's response was positive and proactive. She felt that an overall theme of 'Birds' would be the most appropriate way to integrate *Hadedea Island* into the Grade 4 year plan. Two key objectives of such a focus should be for learners to (i) develop a broad understanding of the topic and (ii) develop some skills (RJA).

⁵ The Science Garden is a small 'conservation' area, approximately 20m², with a pond, reeds, bird hide and indigenous plants, used on a rotational basis by all grades.

During the discussion, Mrs Oftebro referred to other themed approaches that the school had pursued in the past that centred on externally produced educational materials⁶. Mrs Oftebro thus appeared experienced and confident in selecting, adapting and using learning support materials. I provided her with the *Wild About Birds* teachers' pack⁷ and she undertook to communicate with Mr Sliedrecht to plan their focus on 'Birds' and *Hadedea Island*.

The next meeting took place on January 20, 2003 (the day before school re-opened) with Mrs Oftebro, Mr Sliedrecht and me. Both classrooms were already prepared for the focus on the *Hadedea Island Big Book*. Posters on birds, the constitution and children's rights were pinned up and Mrs Oftebro had obtained several books on birds from the municipal library. They had discussed the *Hadedea Island* focus with other colleagues in an effort to gain more suggestions and find opportunities to link with specialist teachers such as 'drama' and 'life skills'. During our meeting, three other teachers briefly visited the classroom to enquire about the *Hadedea Island* concept.

From this meeting and other interactions with colleagues, it became evident that the focus on birds and their habitats could easily dominate and detract from the materials' parallel intention to stimulate learning about democratic processes and social justice. Although a definite focus on birds holds great potential for learning in the Natural Sciences, as well as general knowledge and appreciation of the natural environment, such an emphasis could limit the potential and contradict the intention of the *Hadedea Island* project (See Sections 1.3 and 1.4). I therefore tried, during this and subsequent meetings with the Epworth School teachers, to emphasise the importance of responding to the RNCS 1st Principle.

From this joint planning meeting, the following options for classroom activities were considered (RJA):

- o Role-playing an election could be used as a main theme for the learning programme. This would include activities such as making an election campaign speech 'in role' as one of the birds on *Hadedea Island*, dealing with intimidation, or casting a secret vote.
- o Creative writing such as the *Hadedea* campaigning to be the President of the Island. Learners could also assume roles of other birds and become the 'opposition parties'.
- o Learners may be able to make links between the democratic processes on *Hadedea Island* and current affairs in southern Africa, for example Nelson Mandela's leadership, Robert Mugabe's rule in Zimbabwe.
- o Learners could keep a journal for a week, writing about what happens on *Hadedea Island* and how this relates to their own lives.

⁶ Examples of these educational materials mentioned by Mrs Oftebro include *Enterprise Island* and *Our Community* (RJA).

⁷ The *Wild About Birds* pack was developed in 2001 by the Western Cape Primary Science Project and Share-Net, in alignment with C2005. The pack contains Bird Life South Africa's publication *Learning for Sustainable Living*, two full-colour bird identification posters, an interactive audio cassette on how and why birds sing, and several curriculum-aligned lesson plans and activities.

The teachers and I agreed that they should use the first month of the term to lay a foundation for using the *Hadedea Island* materials. They would first introduce 'Birds' as a theme, develop better understandings of bird habitats, and introduce learners to human rights, the Constitution and democratic elections. Practically, this decision also enabled me to refine the *Hadedea Island Big Book's* design, collect the original artwork (which was being designed in stages by the artist) and spend more time developing the page-by-page written text.

When we met again on February 12, 2003, I was still unable to show the teachers a complete draft copy of the *Hadedea Island Big Book* as the artist had fallen behind schedule and failed to produce the illustrations by the arranged date (RJA; TI-ES1). Although the teachers were very accommodating of this and did not voice any dissatisfaction, I was concerned that our discussions would remain hypothetical until they had seen the actual artwork and could conceive of practical classroom activities. Using loose pages of illustrations and rhyming text, I described to the teachers what each page was intended to convey, pointing out particular design features and potential difficulties and opportunities that I thought might arise (TI-ES1).

Both teachers were excited by the developing book and by the way it was supporting their plans and activities for the term. They were eager to refine their term plans and prepare for specific lessons or activities and so asked for clearer direction. Although trying not to impose my own or my colleagues' ideas on the use of the materials, I did remind the teachers of the emphasis on the RNCS 1st Principle and the potential to use an election focus to achieve this objective. They seemed uncertain of how to approach this and so we discussed in more detail how they could build on the introductory work already done with their learners on the South African constitution and on birds. By using the fantasy element of the materials to shift between an imaginary democracy on *Hadedea Island* and the real situations in their daily lives, learners could role-play a bird election and explore some aspects of democratic processes (TI-ES1).

The teachers seemed more confident to proceed after this interaction and Mrs Oftebro described us as being "...on the same wavelength" (TI-ES1). Some of the teachers' uncertainty, however, may have originated from their own concern for the success of the research project. This is suggested by Mrs Oftebro's comment during the meeting: "We're just scared. We don't want to jeopardise your work. We don't want to do it wrong so that it doesn't work out the way you imagine it" (TI-ES1). Although I had on previous occasions discussed the exploratory and somewhat uncertain nature of this work, I responded to this comment by re-explaining: "...at this stage none of us really has a crystal clear idea because it's never been developed before. And as it was done in Australia, it wasn't exactly what we'll be needing in our situation ... So the whole point of this is to see how it unfolds in the classroom" (TI-ES1).

4.4.2 Sequencing and content of classroom-based work using the *Hadedea Island Big Book*

As mentioned above, the teachers recognised at an early stage of their planning that *Hadedea Island* would work best with their classes (i) if it formed part of a broader theme on 'Birds' and (ii) if interactions with the *Hadedea Island Big Book* were preceded by lessons about democracy, human rights and the South African constitution. In this section, I describe (chronologically as far as possible) what focus areas and activities were associated with the *Hadedea Island Big Book*. It should be noted that, although Mrs Oftebro and Mr Sliedrecht conducted the majority of their lessons separately and worked in different styles and at different paces, the content of their learning programmes was similar enough for me to present one combined discussion here. Appendix R contains a selection of teaching notes and learners' work produced during this time.

The teachers had six weeks of the term to lay the foundation that they felt would be adequate for learners to be able to appreciate and learn from the *Hadedea Island Big Book*. Mrs Oftebro reports that from the very beginning of the term they introduced the focus on children's rights, human rights and making rules for the classroom. "Everybody", she reports, "got bored stiff. They were fidgeting, they weren't focused and ... it didn't grab their attention at all. That was a complete disaster for me – it didn't work at all." (TI-ES2). (Appendix S contains a selection of the main worksheets and activities covered during this time.)

After the focus on democracy and human rights, the teachers turned their attention to the theme of 'Birds'. Learners' first activity was to label a diagram of a typical bird, applying basic rules of scientific illustration such as using a pencil and ruler (LW-ES1). Both classes then studied raptors. Learners received a page of teacher-developed notes on what raptors are, where they live, and what threats they face. They then completed a vocabulary worksheet based on these notes (LW-ES1). The teachers organised a guest speaker, an expert on raptors, to visit the school and bring two live birds for the children to see. Mrs Oftebro reported that this visit was a great success and generated much interest and enthusiasm amongst the learners. When I visited the class a week later, several learners made a point of telling me about this visit and described the birds (an owl and an eagle) in detail.

This study of raptors, especially their talons and beaks, provided good stimulus to study how birds live and are adapted to their habitats. Learners had to write a short creative piece, putting themselves in the role of the bird and describing how it came to be injured on the road. The classes also commenced a study of the main South African terrestrial habitats: forests, coasts, rivers / wetlands, grasslands, farmlands, human settlements, deserts / dry areas, bushveld and mountains. These habitats corresponded generally with, but were not based on, the habitats used in the *Hadedea Island Big Book*. The intention of this study was to introduce learners to the idea that the living conditions and food sources are very different in each habitat and birds are thus physically adapted

to cope with their environment. Once again, worksheets with activities guided learners through this study, such as pages illustrating how the feet of climbing birds are suited to clinging to trees whereas waterbirds have long legs and webbed feet to assist with wading. Mrs Oftebro's class, working at a slightly quicker pace, was able to study wetlands in greater depth, learning about the Wattled Crane and other birds adapted to a wetland habitat. Learners then produced A3 paintings of wetlands and some birds that inhabit them (See Figure 4.3).



Figure 4.3 Part of a classroom display of learners' paintings of a wetland habitat and birds commonly found there. This activity arose from a study of wetlands and other main habitats in preparation for working with the *Hadedea Island Big Book*.

It was with this background that Mrs Oftebro and Mr Sliedrecht commenced work with the *Hadedea Island Big Book* on March 3, 2003. I provided each teacher with an incomplete copy of the material on the understanding that I would add the necessary pages as the artist completed the illustrations. Although a source of frustration and concern for me, this did not disturb the teachers' planning at all because they only required pages one to four during the first week.

Both classes combined in a discussion-based lesson to summarise what they had learned about the birds from each of the habitats. (Learners' most recent activities on habitats had been based on those presented in the *Hadedea Island Big Book*, although they were not yet aware of this link.) The discussion was guided by Mrs Oftebro and learners were very involved and showed an impressive knowledge of the various birds and their habitats. The activity was concluded by learners working on their 'species worksheets' and a brief session to check that everybody had all the pages in the correct order.

After the morning break, learners returned to their separate classrooms and commenced reading from the *Hadedea Island Big Book*. After consultation over tea, Mrs Oftebro, Mr Sliedrecht and I decided it would be best to limit the lesson to the first two pages only, focusing on concepts such as 'a bird's eye view', 'having a place to belong' and 'an island-in-the-sky-land'. The teachers' approach would be to facilitate group discussion around these key ideas and allow the learners to become familiar with the idea of *Hadedea Island* (RJA).

The learners had previously been told by their teachers that they would be working from a wonderful book called *Hadedea Island*, and there was thus a great sense of anticipation at the start of this lesson. The class was also very aware of my presence with the video camera and this seemed to add to their sense of excitement. Mrs Oftebro gathered the class on the reading mat in the front of the classroom and commenced the lesson.

Mrs Oftebro introduced *Hadedea Island* as a place where nobody has been: "It doesn't exist; it's an imaginary island" (RJA). Learners then scrutinised the cover illustration of the island and engaged in a lively discussion about the habitats they could recognise, which birds might live there, in which habitats, and what the whole story might be about.

The cover had generated much interest and the learners were eager to look at the first page. They studied the illustrations of each bird closely, pointing out details of the artwork and of the birds' physical features. Mrs Oftebro read the text of pages one and two aloud to the class, allowing them to follow the words quietly. After discussions about each page, she referred back to the text as a type of summary and requested the learners to read it aloud together. This was performed with much enthusiasm. The lesson ended with the class being set the task of drawing a cover for their own A4 version of *Hadedea Island*. They had to imagine how the island would look from the sky ('a bird's eye view') and use colours to draw the details on the island. On the back cover they could draw anything else that they felt would be appropriate for the book.



Figure 4.4 Learners look closely at the pages of the *Hadedea Island Big Book*. During this lesson, I noted how interested learners were in reading the story and how attentive they were to details of the illustrations (RJB). (Sourced from digital video)



Figure 4.5 Four samples of learners' work showing their cover designs for their own A4 copies of *Hadedea Island*.

A similar introductory lesson took place with Mr Sliedrecht and his class. He chose to introduce the *Hadedea Island Big Book* and the imaginary nature of *Hadedea Island* by comparing it to a film which, as we watch it, transports us to another world. Once again, learners were very interested in the cover illustration and attempted to match their recent studies of habitats with those portrayed on the cover. Mr Sliedrecht developed that interest into a discussion about why birds would or would not want to live in each of those places.

A discussion developed around the use of the hyphenated 'island-in-the-sky land'. Learners puzzled over what this meant, suggesting: "It's up the clouds", "It's an imaginary land; made up in our minds" and finally recognising that "They can *all* stay there." (RJA). Mr Sliedrecht then posed the question: "Why don't we call all birds 'finches'?" After some debate, the class concluded that it is because each bird has its own characteristics and habitat and so they cannot be grouped as if they are all the same. There was just enough time before the end of the lesson for Mr Sliedrecht to link this idea to people, pointing out that we are individuals with our own names and places to live.

In the following day's lesson, Mrs Oftebro chose to use worksheets and an activity to prepare her class for the page on 'the cacophony' when "every bird sings out at once" (see Appendix A). She had developed a one-page worksheet to support a classroom discussion about rules, with key questions for learners to consider such as: "Why do we have rules?", "Who makes the rules?" and "Who makes the school rules?" The discussion, carefully facilitated by Mrs Oftebro, led quickly to a focus on government and laws, with many learners wanting to share stories about punishments and executions.

The class then played 'the Bottle Tops Game' (RJA) for which Mrs Oftebro divided the class into two teams and gave each group a roughly equal pile of bottle tops. One learner was selected to be the judge, Mrs Oftebro then told the class they had 5 minutes to play the game, "Ready...GO!" A chaotic and noisy 'game' ensued, with neither team knowing what to do and eventually resorting to throwing the bottle tops at one another. The judge then had to decide on a winner and Mrs Oftebro then asked the losing team why they thought they had done so badly. The predictable explanation was that they did not know what they were supposed to be doing; and accusations were quickly made about the judge's favouritism because her friends were on the winning team. Mrs Oftebro then used this very tangible example to explain why rules are so necessary if we want to lead organised lives and enjoy activities such as sports.

The class then returned to reading from the *Hadedea Island Big Book* and spontaneously read aloud when Mrs Oftebro recapped on the previous day's pages. Focusing on the 'cacophony' page, Mrs Oftebro asked: "Do you think everybody should have a chance to say what they want to?" and "Does the Hadedea have more right to the worms and the bugs than a Woodpecker?"(RJA). The class was

initially divided over this last question but eventually concluded that no matter what their size and appearance, all birds should be allowed to do the same things.

Each learner then had to invent his / her own bird sound and perform it to the class individually. Then, on the count of three, all learners had to make their sounds together, thereby demonstrating a cacophony and why there is a need to organise the different voices.

Both teachers at Epworth School continued to work through the *Hadedea Island Big Book* in this way. As they worked through the various pages (which were produced in stages by the artist and inserted into the books just in time before the relevant lessons) learners began to notice more details in the illustrations and started to recognise individual bird 'characters'.

The teaching focus then shifted from bird characteristics and habitats to election processes. Each learner selected a bird species (an 'elected representative' from *Hadedea Island*) and had to develop an election poster for this bird. Although my suggestion had been for learners to develop these posters as an artwork activity, Mrs Oftebro and Mr Sliedrecht extended it into a wider and much more challenging activity. Mrs Oftebro prepared notes photocopied from a textbook about political party posters. This introduced learners to characteristics of posters such as logos, slogans, the proportion of writing and images, and the effect of different colours.

The second page of notes showed an election ballot sheet, and was labelled to show party logos and the column where voters are required to place their crosses. The concept of party logos, requiring some basic understanding of symbolism, was a difficult one for the learners to grasp in one lesson, but the notes' practical examples gave them enough inspiration to try creating their own.

A few lessons were spent planning an 'election campaign' and a draft of the poster on A4 paper. Guiding questions assisted the learners in role-playing their chosen birds, thinking about their physical characteristics, personalities and the habitats in which they lived. The task required learners to think carefully about the needs of various communities of birds (for example food, safety, nesting sites), what threats to that community existed (for example pollution and habitat destruction) and what their elected representative would need to do to keep individuals satisfied.

Over the next week, learners put much effort into designing and presenting their campaign posters. These formed the basis of the 'Great Bird Election' when both classes combined to look at all the posters and vote for the 'Bird of all Birds' (See Appendix T for a light-hearted report written by me after the event. Modelled on a typical newspaper report, the article was written for the Grade 4 classes as a fun way to round off the election and the official focus on *Hadedea Island*.)



Figure 4.6 Learners display their election campaign posters. For their posters, they had to develop a political party name, slogan and logo, and then combine these elements in an eye-catching poster.



Figure 4.7 Grade 4 learners look closely at the whole grade's election campaign posters while queuing to cast their vote in 'The Great Bird Election'.

The general focus on birds enabled Mrs Oftebro and Mr Sliedrecht to integrate other Learning Areas into their planning. For Design & Technology, learners were tasked with designing a bird feeder. When I observed Mrs Oftebro's class on February 25, 2003, learners were designing bird feeders made of two-litre plastic Coke bottles, and using a worksheet to guide their planning. Making these bird feeders became a long-term focus. Learners were later tasked with designing another feeder using any materials, but which had to conform to basic requirements such as a maximum height of 50 centimetres, having a hanging device, a perch or landing stage, and being weatherproof. Learners had to draw a detailed plan of their proposed feeder, list the required tools and materials and provide clear instructions on how to construct it (LW-ES1). My visit to the school during August to verify my description of the teachers' contextual profile happened to correspond with the class' hanging of all the bird feeders in the Science Garden. When I arrived, Mrs Oftebro's class was in the garden sketching the birds that were visiting their feeders. The bird feeders were generally well-constructed and learners were enthusiastic and proud of their completed projects (RJB).



Figure 4.8 "Design Technology lessons were used to plan and build bird feeders. The pupils wrote 'blueprint plans' and certain criteria needed to be met. Their bird feeders successfully attracted more birds to the science garden. Learners observed and recorded info. on the visitors."

Mrs Oftebro

Attempts were also made to integrate the *Hadedea Island* theme with the Grade 4's drama lessons which are timetabled separately as the school has a designated drama teacher. I suggested developing a song or rap that could be used to summarise *Hadedea Island's* key concepts such as having the right to freedom of speech. However, the drama teacher reported that the learners became too involved with the challenge of creating rhythm and rhyme and were thus unable to benefit from the activity (RJB; TI-ES2). She recommended that, in future, a pre-developed song or drama would be more suitable as the learners could then concentrate on performances rather than having to conceptualise the material first.

4.4.3 Curriculum links and assessment

In reflecting on how the *Hadedea Island Big Book* supported the curriculum, Mrs Oftebro reports that they "...did it backwards". She explains that they considered *what they would like to achieve* with their Grade 4 learners, later checked *how* it articulated with the curriculum, and were then "excited" to see that there was a strong correlation between the two (TI-ES2).

These curriculum links were strongest in Social Science [Learning Outcome 3 (Geography): "The learner will be able to make informed decisions about social and environmental issues and problems" (DoE, 2002: Social Sciences)] and Life Orientation [Learning Outcome 2: "The learner will be able to demonstrate an understanding of and commitment to constitutional rights and responsibilities ..." and Learning Outcome 3; "The learner will be able to use acquired life skills to achieve and extend personal potential to respond effectively to challenges in his or her world" (DoE, 2002: Life Orientation)].

Mrs Oftebro feels this is a strength of the *Hadedea Island* materials because these Learning Areas are not readily supported by themes typically selected by teachers. She feels that: "Having done *Hadedea Island*, you will definitely have covered that [Learning Outcomes for Life Orientation and Social Sciences] and you can relax about it for the rest of the year, or even the phase". She explains that, "It's just too daunting to try and do everything every year!" and so at Epworth Primary School, teachers plan to cover all things *at least once* per phase.

Both teachers note, however, that assessment criteria were also easily met in the Learning Areas of Languages, (creative writing, speech-making and factual writing), the Natural Sciences (bird and habitat studies) and Arts & Culture (role-playing birds, enacting the election, performing in the assembly, painting, making masks and designing posters).

Mr Sliedrecht describes the *Hadedea Island Big Book* as an ideal tool to support teaching and learning as described in the RNCS 1st Principle. He says: "[T]o try and teach about democracy and

all these principles that only adults are supposed to know about, it would be impossible unless you built it into a context that they could relate to". He concludes that:

The way it was pitched and the whole vehicle it went through, of *Hadedda Island*, the imagination, the pictures ... got it straight through to them as they needed to know it. They didn't need the technical detail and that. But that caught them up in the whole thing and they ... internalised it without having to go through the whole learning, hyper-focused" (TI-ES2).

Mrs Oftebro agrees with this, stating that *Hadedda Island* "... opens up a whole new vehicle to teach about what in the OBE [curriculum] seems very dry" (TI-ES2).

According to Mrs Oftebro, the Wetlands Scenario (see Appendix U) provided "... a base for teachers to work from" (TI-ES2) and was an excellent activity to consolidate the curriculum work associated with the *Hadedda Island Big Book*. It was also an effective way of assessing whether learners could apply their knowledge to environmental problem-solving.

For Grade 4 learners, the story was quite complex, involving several stakeholders in a typical wetland ecosystem such as Wattled Cranes, farmers, communities living downstream of the wetland, seed-eating birds, fish-eating birds and bird conservationists. The class activity (which lasted several days) was for learners to work in small groups and role-play a selected stakeholder in the story. Each group had to reach consensus regarding their identity, role and needs in the wetland ecosystem and then present their case either for or against the building of a dam.

Mrs Oftebro described how learners kept re-plotting the story and arguing over who would be most affected by the dam. She felt that this type of role-play story is "... the perfect vehicle..." for continuous assessment of learners' understandings of complex environmental issues (TI-ES2). Mr Sliedrecht added that he noticed his learners' responses changing by the end of the activity: "They see it from not their perspective alone. They have almost 'matured' ... so that now they see democracy is about seeing everybody's perspective" (TI-ES2).

Building on the experiences of their activities related to the *Hadedda Island Big Book*, and the understandings gained from the Wetland Scenario, the Grade 4s undertook to present an assembly to the whole school on what they had learned. The assembly took the form of a play, the script of which appears in Appendix V. The scenes, compiled mainly by the learners with guidance from their teachers, introduced the audience to typical problems associated with wetlands: habitat destruction for agriculture versus the need for food crops, habitat loss for birds such as the Wattled Crane, consequences for neighbouring communities, and the question of whose voice to listen to. The learners then invited their audience to travel with them to *Hadedda Island* where they could learn from the birds how to solve their wetland problems democratically. Small groups then took turns to recite each page of the *Hadedda Island Big Book*, dramatising the verse and wearing theatrical masks they

had made for each species. The assembly ended with the whole grade singing a recent popular song “Stand up for the Champions”, adapted to be sung as “Stand up for Democracy”.



“Presenting our work on Birds and Democracy in the assembly for the whole school really brought the theme to life and made it more meaningful for the rest of the school as well as the other teachers.”

Mrs Oftebro



Figure 4.9 Learners display the masks they made and wore during their *Hadedea Island* assembly. (Learning Area: Arts & Culture; Learning Outcome 1: “The learner will be able to create, interpret and present work in each of the art forms” (DoE, 2002; Arts and Culture).

Figure 4.10 Grade 4 learners perform on stage during their *Hadedea Island* assembly for the whole primary school. (Learning Area: Arts and Culture; Learning Outcome 3: “The learner will be able to demonstrate personal and interpersonal skills through individual and group participation in Arts and Culture activities” and Learning Outcome 4: “...able to analyse and use multiple forms of communication and expression in Arts and Culture”.

4.5 REFLECTIONS AFTER THE PILOT PHASE OF THE *HADEDEA ISLAND BIG BOOK*

Mrs Oftebro comments that the staff’s curiosity about the focus on *Hadedea Island* was interesting to note. When told that the Grade 4s were studying ‘birds and democracy’, the response was usually negative. Most teachers believed that the South African Constitution, democracy and rights was boring for Grade 4 children and, “... the last thing that anybody would want to teach – particularly when you’ve got so much freedom to do whatever you like” (TI-ES2). Mr Sliedrecht confirms that many teachers felt the theme would be too advanced for their age group, although their activities have demonstrated that it was very appropriate and productive.

Mrs Oftebro feels that the build-up to the reading of *Hadedea Island* is crucial in shaping the learners’ understanding and appreciation of its content. The route she and Mr Sliedrecht chose worked well and, although the idea of integrating habitat study, bird study and democracy studies “... is interesting”, she feels it creates too much complexity for Grade 4 learners and would not work as

effectively. Related to this, Mr Sliedrecht points out that characteristics of both the class and the teacher have a significant influence on how the *Hadedea Island Big Book* plays out in practice (TI-ES2).

Mr Sliedrecht explains that if they were to use the *Hadedea Island Big Book* again, he would prefer to work first with a Natural Sciences focus, and then work with a human rights / social justice / democracy focus. Mrs Oftebro, however, prefers a more diverse and integrated approach but points out that it is “clumsy” to plan and does not lend itself to neatly-achieved Learning Outcomes (TI-ES2). Using the *Hadedea Island Big Book* again, she would nonetheless start the term with a clear Natural Sciences focus and build on that to explore other dimensions of the materials.

I just can't think of a better way of teaching about elections, and I think they're very topical as everyone in South Africa has the right to vote. Even if an election were to come up in three year's time, they're going to remember this, and they're going to remember things about it. So for me it would be a lost opportunity not to teach elections, the constitution and what have you (TI-ES2).

4.6 REFLECTIONS TO GUIDE PHASE TWO OF THE DEVELOPMENT PROCESS

In keeping with the action research focus of this study (see Section 3.2.1), I needed to reflect on these experiences with Epworth School and be guided by the insights to initiate Phase Two of the study in two other schools.

The piloting of the *Hadedea Island Big Book* had been a very positive experience in Epworth School but I recognised that many of the reasons for the materials' success were associated with the learners' supportive home contexts and the school's status of being well-resourced with a strong, creative work ethic and a highly qualified and motivated staff. Anticipating that many of the abovementioned activities would be less appropriate in less advantaged schools, yet cautious of this assumption and uncertain of what changes *should* be made, I decided not to make modifications to the *Hadedea Island Big Book* and to observe the variety of responses and understandings it would generate in the Grade 4 classes of Howick Preparatory School and Nogqaza Primary School.



Chapter Five

Nesting: The Trial Phase with Nogqaza Primary School and Howick Preparatory School



... I thought gee whiz, the sky's actually the limit!

Mrs Bulcock,
Howick Preparatory School, 2003.

5.1 INTRODUCTION

The early development work and pilot testing of the *Hadedea Island Big Book* that had taken place at Epworth School was characterised by its open-ended and creative interactions. However, I had entered that phase acknowledging that such interactions are contextual and isolated, and I could not base future design decisions with regard to the *Hadedea Island Big Book* exclusively upon the insights gained from such collaboration. If the *Hadedea Island* materials are to be printed and distributed through Share-Net, they will need to be presented in a way that minimises their dependency on an outside facilitator when they are purchased and used by teachers. The interactions with Epworth School had been invaluable in giving the project a creative lift from the conceptual stage into practical development, but it was necessary to take what had been learnt during this phase, formalise its presentation, and record how the materials were received and used by teachers in other schools who had not had the opportunity to plan lessons, activities and worksheets in partnership with the materials' developer. Furthermore, working with other teachers and learners would reveal new perspectives, interpretations and curriculum-related opportunities, and hence broaden the scope of the materials for future use.

I elected to work with two schools in the Howick area: Howick Preparatory School and Nogqaza Primary School. This chapter describes the experiences of these schools in working with the *Hadedea Island Big Book*. Unlike with the teachers of Epworth School, where I spent much time clarifying the materials' intention and discussing with teachers their intended activities, in Phase Three I elected to distance myself more from the teachers' planning activities. This would give some indication of the way in which the *Hadedea Island Big Book* could be interpreted and used by teachers without outside mediation, such as when distributed to schools via the Share-Net network. I provided both schools with a complete draft version of the *Hadedea Island Big Book*, and a *Wild About Birds* pack as encouragement to use supplementary learning support materials to enhance the *Hadedea Island* activities.

5.2 THE CONTEXT OF HOWICK PREPARATORY SCHOOL

5.2.1 The school's ethos and socio-economic background

Howick Preparatory School is a former Model C school¹ servicing a generally middle to lower income group in the town of Howick in the KwaZulu-Natal Midlands. During 2003, the school enrolled 620 girls and boys from Grade 1 to Grade 7.

¹ Prior to the existing democratic government in South Africa, racially segregated schools were classified as Model A, B or C. Historically, Model C schools were state-funded for white scholars with white teaching staff. After schools became integrated, Model C schools were still recognised for being comparatively well-resourced with high pass rates.

The school community is “closely involved” (TP-HP2) with school activities such as sporting events, musical / dramatic productions and outings. Mrs Bulcock describes the majority of parents as willing to “... transport children when we go on outings and to sport activities” (SQ-HP).

Mrs Bulcock also describes Howick Preparatory School as “... an incredibly well equipped school ...” (TP-HP1) (see Figure 5.1). Learners and teachers have access to a computer centre with approximately 40 computers, a science laboratory, design and technology laboratory, a swimming pool, sports fields and tennis courts. Music and Art are offered once per week as part of the compulsory school timetable and learners are encouraged to participate in extramural activities such as cricket, swimming, netball, chess, choir, rugby and soccer.

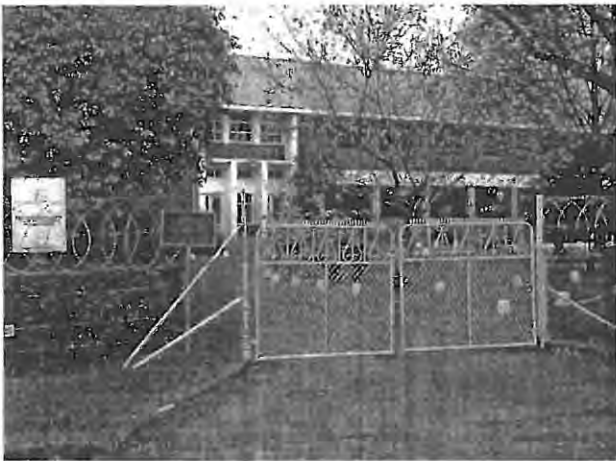


Figure 5.1 A secondary entrance gate to Howick Preparatory School showing security gates, a portion of the school buildings and well-maintained school grounds.

The Principal of Howick Preparatory School is described as one who “... allows individuality ...” (TP-HP1) and is supportive of the introduction of OBE and Curriculum 2005. Regular workshops are held to keep staff informed of curriculum changes and relevant teaching approaches (TP-HP1). The teachers participating in this study describe the staff’s attitude to curriculum changes as generally positive:

We are encouraged to attend APEK workshops on different courses regularly. Methods are more OBE orientated e.g. more research (self studies) and group teaching. We also have staff development programmes that are compulsory for us to attend (SQ-HP).

These staff development programmes have included in-service training on group teaching and departmentally run workshops on OBE and C2005.

5.2.2 Participants in the trial phase: two teachers and their classes

Mrs Bulcock has a Higher Diploma in Education (HDE) and has been teaching for 20 years. In Howick Preparatory School she is the co-ordinator for Grade 4 and, within her own class, is responsible for teaching and assessing all Learning Areas.

Mrs Bulcock describes OBE as “learner centred education – developing the child as a whole – socially, emotionally and intellectually” (TP-HP1). In her own teaching practice, she identifies a learner-centred approach and group teaching as the main strategies she uses. Learning support materials most commonly used by Mrs Bulcock are computers, resource materials (such as charts, computer programs, videos) the teachers' library run by the Library Services in Pietermaritzburg and teacher-made worksheets (TP-HP1; SQ-HP).

There are 22 mixed ability learners in Mrs Bulcock's class whose average age is ten years. English is the primary language spoken by these learners (TP-HP1). Mrs Bulcock describes the range of learners:

Generally speaking the parents of the brighter children are the ones who instil good work ethics and these are generally our achievers. We have large groups of tail enders and many of these learners are from disadvantaged backgrounds – where parental support and work ethics don't exist! (SQ-HP)

Mrs Bullock has been teaching for six years and is qualified with a four-year Higher Diploma in Education. Like Mrs Bulcock, she is responsible for teaching all Learning Areas except Life Skills to her class of 22 Grade 4 children whose profile is similar to that of Mrs Bulcock's, described above.

In her regular teaching practice, Mrs Bullock explains that she uses research projects, group work and discussions. She has a strong interest in nature studies and conservation issues and tries whenever possible to introduce this perspective into her teaching.

5.2.3 Environmental learning in the school

Mrs Bulcock and Mrs Bullock describe the status of environmental learning in their school as good. Excursions for all grades are encouraged to venues such as “Umgeni Bird Park, Eshowe – Dlinza Forest, Crocodile Farm, Herb Nursery, mushroom farm, wetlands, Oceanarium, San Paintings, Tala Game Reserve” (TP-HP1). In further support of environmental learning, Mrs Bulcock identifies the Education Library, Share-Net materials and environmental education centres such as Umgeni Valley and the Dundee and Eshowe centres as supporting environmental learning in the school's curriculum. Where Mrs Bulcock regards these excursions and the Natural Sciences Learning Area as the most direct way in which she incorporates environmental learning in her curriculum planning, Mrs Bullock adds that it is through cross-curricular activities that this is achieved. For example, she explains how “English-based [activities] on Natural Science themes such as Birds, Astronomy, Planets and Natural Disasters” bring environmental learning into her curriculum activities. Both teachers agree that Natural Science, Languages, Literacy and Communication (LLC) and Human, Social, Economic and Management Studies (HSEMS) are the Learning Areas that most directly feature environmental learning in their school.

The teachers identify alien vegetation and litter as environmental issues in or near their school. Mrs Bulcock states that “camphor trees, bugweed and bramble along the Umgeni River and litter (ongoing problem with youth)” are issues that need attention. She thus cites a “clean, litter free school” and “good sanitation” as important factors in establishing a healthy environment in or near the school (TP-HP1).

5.3 EARLY INTERACTIONS

Although I had attempted three times in December 2002 to speak telephonically to the Principal of Howick Preparatory School about the prospect of his Grade 4 teachers participating in this study, he was unavailable and did not return the calls before school closed for the December vacation. In the new year, on February 17, 2003, I met with the Principal and presented a brief overview of the proposed *Hadedda Island* study and requested permission to work with the school's Grade 4 teachers and learners. He expressed his enthusiasm for environmental education in general and hence his support for this particular undertaking, adding that I should contact him when I am ready to commence classroom-based work on the project (RJA).

In mid-March, I had an informal meeting in the staffroom with the three Grade 4 teachers and briefly showed them the draft copy of the *Hadedda Island Big Book* and outlined some general ideas of how they might use the materials in their teaching activities. A follow-up meeting was scheduled for March 24 at which the three teachers, Rob O'Donoghue and I met in Mrs Bulcock's classroom to explore the potential of the materials in greater detail.

O'Donoghue described the *Hadedda Island Big Book* as “... a truck onto which you pile the things you want to teach”, as teachers ‘drive’ with their learners along the curriculum road (RJB). This appeared to resolve some of the teachers' uncertainty with regard to how they should interact with the *Hadedda Island Big Book*. The metaphor was also useful in presenting the materials as open-ended, flexible teaching and learning support materials rather than as a fixed programme.

These discussions led the group to identify two possible general approaches to using the *Hadedda Island Big Book*. The first, a more linear approach, required teachers to start by teaching about birds, their habitats and adaptations, and later building on that to consider issues of rights, justice and democratic processes. (This approach is summarised and presented in Figure 5.2.)

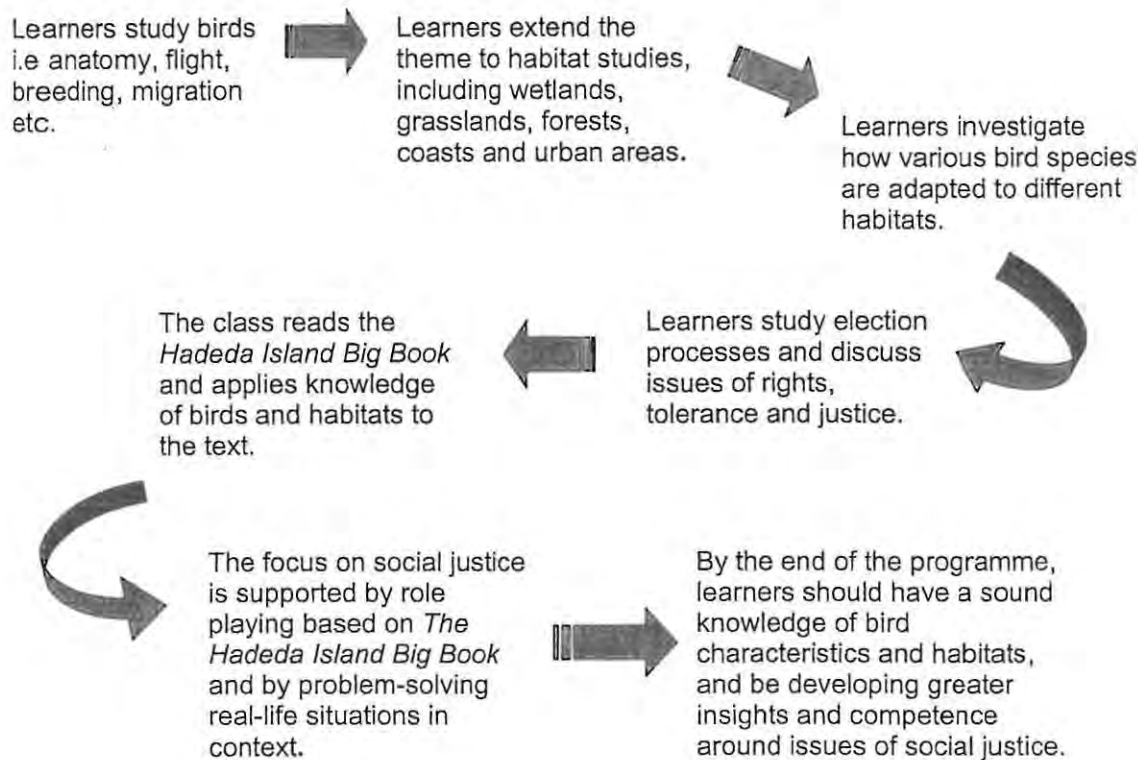


Figure 5.2 A linear approach to using *the Hadededa Island Big Book* at Grade 4 level that emerged during a planning meeting with teachers from Howick Preparatory School.

The second possible approach was more integrated, requiring teachers to use the Hadededa Island Big Book as the central focus and then pursue a variety of learning activities parallel to one another (see Figure 5.3). Hence, for instance, learners would study bird habitats and adaptations *whilst* considering the bird election campaign and the needs of the various species in each habitat (RJB). O'Donoghue encouraged the use of this latter approach as it corresponded better with the integrated environmental perspectives that underlie the *Hadededa Island Big Book*. Mrs Bulcock and Mrs Gardener were not in favour of adopting this approach but Mrs Bullock expressed an interest in trying it with her class.

The teachers expressed an interest in focusing in more detail on the forest habitat as they had made reservations to take the Grade 4 group to the Dlinza Forest in Eshowe, northern KwaZulu-Natal, as part of a class excursion the following term. The *Hadededa Island* materials, then, would assist in the preparation of learners for this visit by introducing them very generally to a range of habitats, and then more specifically to the forest habitat and the birds they could expect to see there (RJB). It is from this meeting that the teachers planned their classroom activities using the *Hadededa Island Big Book* and worked with the materials during April and May 2003.

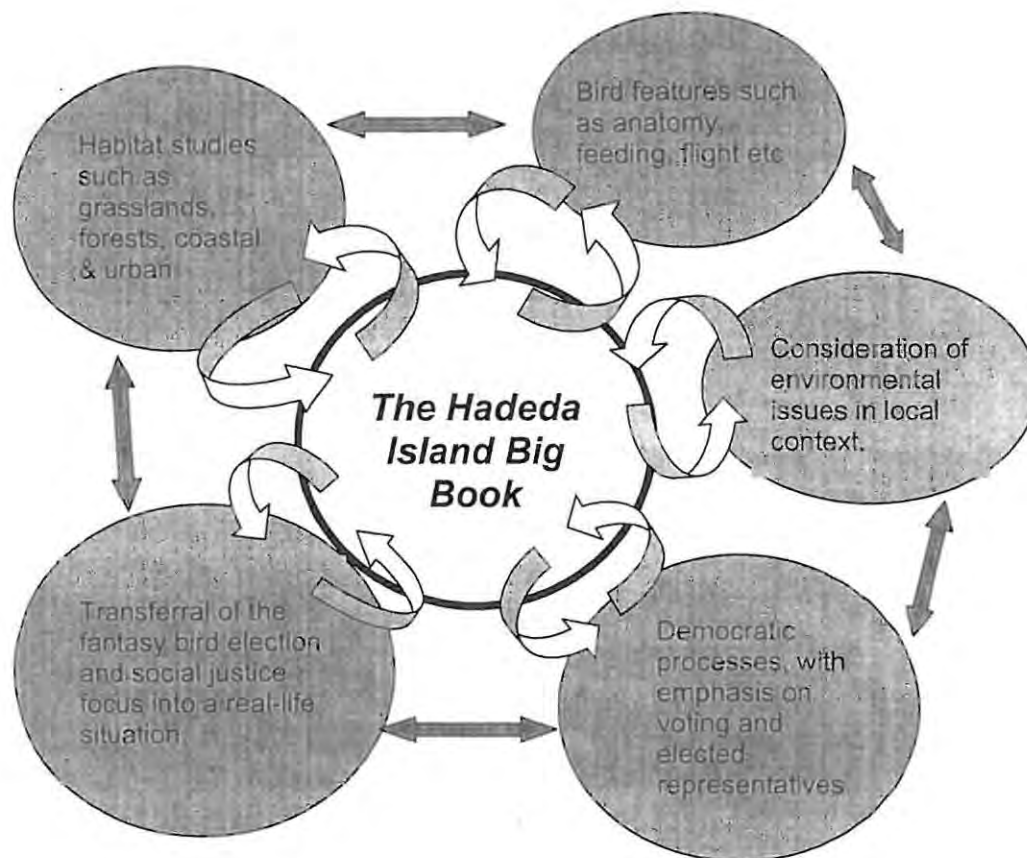


Figure 5.3 An alternative approach to using the Hadedea Island Big Book at Grade 4. This approach requires the multiple aspects of potential learning to be explored *in interaction* with one another.

At this early stage, the teachers indicated that the broad scope of the *Hadedea Island Big Book* (in terms of possible curriculum links and classroom activities) had the potential to be overwhelming. Their response was thus to keep their focus and lesson plans as simple as possible (RJB). Although supportive of the intention and potential of the *Hadedea Island* project, they remained realistic about the scope and effectiveness of the materials as received by their learners. Mrs Bullock pointed out that some learners will not be remotely interested in birds and will therefore not enjoy the theme at all (RJB). Similarly, the teachers also recognised that *Hadedea Island* would play out differently in both classrooms due to different teaching styles, learner groups and classroom ethos (*ibid.*).

Both teachers were interested in receiving supporting materials that I offered to provide from Share-Net, such as the *Wild About Birds* Pack and Enviro Fact Sheets. They indicated that some orientating notes or guidelines for teachers would be especially useful. Although I had initially been reluctant to provide such guidelines so as to minimise my influence on each school's use of the *Hadedea Island Big Book*, I recognised that the scope and open-ended nature of the material required some form of mediation. Consequently, two days later, I provided Mrs Bullock and Mrs Bulcock with

a set of guiding notes presented in mind-map style for each page of the *Hadedea Island Big Book* (see Appendix A). It was hoped that the teachers' experience of using the format and content of these pages would guide subsequent development of the teacher support pack that I envisaged accompanying each book.

5.4 TEACHERS OF HOWICK PREPARATORY SCHOOL PLAN AND USE A LEARNING PROGRAMME

Before commencing work with the *Hadedea Island* materials, all the Grade 4 classes had completed a theme on 'South Africa'. Mrs Bulcock explains that she introduced the *Hadedea Island Big Book*:

... soon after we'd finished our section on South Africa because I thought it would fit nicely with our section on habitats, the different habitats that we find in South Africa. So I started and did the back part where you start doing the habitats on Hadedea Island, that's where I started, and we went through each of the habitats, then I came back and did more of the lifeskills part leading up to the elections (TI-HP).

She reports that they commenced by looking at the front page of *The Hadedea Island Big Book* in some detail, speaking about the different South African habitats they could recognise. Mrs Bulcock later explained that, "It doesn't make sense to do it the way it's done in the book" (RJB) and she therefore jumped straight to the pages that introduce the elected representatives of each habitat (See Appendix A).



Figure 5.4 Mrs Bulcock's classroom, showing learners' artwork of guinea fowl and teaching and learning support materials on display on the back wall including bird identification posters and close-up views of raptors.

Mrs Bulcock prepared information and questions on each of the habitats portrayed in the *Hadedea Island Big Book* and organised her class into groups of four learners each. Each group worked on one of the habitats and completed the preset questions before reporting back to the rest of the class.

We had a discussion about which habitat they thought was most important and I got some children to canvass for the different habitats. That led up to who was going to win and form the parliament (TI-HP).

Over and above the Natural Science-orientated study of birds that was stimulated and supported by the *Hadedea Island Big Book*, Mrs Bulcock also used the bird theme to conduct character studies with her learners. She and the class considered the various birds in the book and imagined what sort of character each would have: "... like the Hadedea being loud and always heard, we related that to the Life Skills side and the bossy people" (TI-HP).

Both Mrs Bulcock and Mrs Bullock² used an innovative approach to provide their learners with copies of the pages of the *Hadedea Island Big Book*. They produced a series of photocopied pages on which each page of *Hadedea Island* had been reduced to fit into the top right quadrant. This left three blank quadrants on each page for learners to do various activities as they worked through the book.



Figure 5.5 Learners from Mrs Bulcock's class work in pairs on an activity related to habitat studies. They are using their A3 workbooks compiled by Mrs Bulcock. (Sourced from digital video)

Both teachers commenced work with the *Hadedea Island Big Book* in early April, with a pause in the second half of that month due to the Easter vacation and public holidays. When I spoke to Mrs Bulcock telephonically on May 5, she reported that work on *Hadedea Island* had been slower than expected and they would soon need to stop using the materials and commence the next theme, 'Zulu History'.

Their time on the theme was brought to a close with a focus on leadership and voting, culminating in a class election in which learners voted for the ruler of *Hadedea Island*. In the build-up to this election,

² It should be noted that, although all three Grade 4 teachers at Howick Preparatory School participated in the initial planning meetings around *Hadedea Island*, Mrs Gardener withdrew from the activities for a combination of personal and professional reasons that were unrelated to the research project and my interactions with the school. Her class, therefore, did not work with the *Hadedea Island Big Book* at all and my discussions henceforth refer only to Mrs Bulcock's and Mrs Bullock's interactions.

Mrs Bulcock had led her learners through a series of classroom discussions about leadership and voting. In the lesson that I observed, learners provided confident answers to Mrs Bulcock's questions about good leadership. They identified fairness, honesty, listening skills and respecting others' opinions as ideal qualities (RJB).

During that week, learners had also learned about voting procedure and, recapping on previous lessons, they were able to explain that a person needs to be over the age of eighteen, a South African citizen and in possession of an identity document in order to vote in an election. Mrs Bulcock brought her own identity document to the lesson for learners to look at. They were then tasked with drawing their own identity document in their *Hadedea Island* activity book, using the blank quadrants on the page that presented the 'Great Bird Election'. On completion of this task, learners used an ink pad to make thumbprints on the same page (stimulated by earlier discussions about fingerprints being needed for the issuing of identity documents). They then transformed these thumbprints into fantasy birds by drawing feathers, legs, beaks and eyes (see Appendix L).



Figure 5.6 “Eric making his ‘ID Book’ so that he can cast his vote” (Mrs Bulcock)

Two days later on May 16, the class concluded the *Hadedea Island* theme by casting their vote for the bird they felt should be leader of Hadedea Island. Learners were given ballot sheets prepared by Mrs Bulcock and went through the typical election procedure of waiting in a queue, making a cross on the ballot sheet and then placing it in the secret ballot box. I was then called upon to tally the votes and announce the Black Oystercatcher as the outright winner of the election.

Mrs Bullock followed a similar sequence with her class although she reports that time was a major limiting factor, that her choice of approach was not as successful as she had hoped and that “... there was an awful lot...” in the *Hadedea Island Big Book* (TI-HP). She describes her overall approach:

I tried to slot our whole bird theme in with it and it actually didn't work because you didn't move into the whole sort of make believe type land, and we kept getting bogged down with facts about birds rather than moving onto the social aspect of it all. The social studies aspect, I went in the front there with the differences in the animals, and we did discuss briefly the differences ... of birds and then we looked at the differences of people, and then we moved to be more tolerant. ... Well, the birds we were looking at long legs, shorts legs, long bills and short bills. And just because they were different didn't make you better or worse, it just made you different! (TI-HP)

Prior to the lesson I observed on May 14, Mrs Bullock had read her class the 'Starfish Story' about how one person undertook to throw dozens of starfish back into the sea after they had been washed ashore during a violent storm. When challenged on the futility of this act, given that thousands of starfish lay on the beach, the person replied that his efforts made a difference at least for those that were rescued. From this legend, the class concluded that one person *can* make a difference, and that small actions can give rise to big results.



Figure 5.7 Mrs Bullock recaps the story about returning stranded starfish to the sea after a violent storm as a lead in to the class' focus on environmental responsibility. (Sourced from digital video)

From this orientating idea, the class discussed food webs and worked on activities using Share-Net's Eco-Puzzles¹. Mrs Bullock divided the learners into four groups and directed them to rotate between the four large tables on which the different Eco-Puzzles were placed. In their groups, learners were required to consider each ecosystem and take note of similarities and differences. A subsequent plenary discussion required learners to discuss these similarities and differences and then consider what threats there were to each habitat. Learners suggested fires, chopping down of trees, air pollution and ploughing up grassland for crops. Through Mrs Bullock's careful mediation of this discussion, learners were able to conclude that 'responsibility' is of paramount importance when deciding how to manage natural resources (RJB).

¹ Eco-Puzzles are a series of cardboard pages depicting four key habitats: garden life, forest life, grassland life and river life. Various plants and animals commonly found in these habitats are illustrated. These are cut out by learners who must then arrange the various organisms to make a food web.

To consolidate this activity, Mrs Bullock set learners the task of writing a letter to Nelson Mandela in which they describe five things that are harming the environment and make suggestions as to how these problems could be solved. During a brainstorming session, the class was able to provide some insightful and practical suggestions such as using television to teach people about bad practices, putting up signs in problem areas, employing guards in sensitive grassland areas, protesting, creating more nature reserves and introducing more legislation. After the lesson, Mrs Bullock reflected that writing a letter to Nelson Mandela was "... too remote..." (RJB) and that she should have selected something more local and familiar.

5.5 TEACHERS OF HOWICK PREPARATORY SCHOOL REFLECT ON THEIR USE OF THE *HADEDA ISLAND* MATERIALS

5.5.1 An overall impression of the materials

Mrs Bulcock and Mrs Bullock were both positive about the *Hadedda Island Big Book* as a developing learning support material and are keen to use it again in future years. They cited time pressure as the most dominant limiting factor in using the material, and expressed frustration and disappointment at not being able to do justice to the resource in the time available to them.

Mrs Bullock expressed her concern that "...these children don't believe they're being taught unless they've got a worksheet or an exercise book in front of them", and that the frequent group work and creative activities might cause them not to take the study seriously. In contrast to this, Mrs Bulcock emphasised how much her learners loved the *Hadedda Island* activities and "learnt an enormous amount" (TI-HP).

Mrs Bulcock regularly referred to the great potential of such a learning support material in many Learning Areas, but pointed out that this can be overwhelming for teachers and difficult to manage (TI-HP).

5.5.2 Assessment of learners

The teachers report that "...no marks were allocated" to learners' activities related to the *Hadedda Island Big Book*. Their assessment focused instead on the learners' abilities to co-operate and work in groups (RT-HP1). Mrs Bullock points out that it is very difficult to assess the extent of their environmental learning because "...there's also maturity levels" and the fact that learners do not really show signs of changing their behaviour despite learning during lessons.

5.5.3 Recommendations for further development and use

Both teachers emphasise that attempts to integrate learning about issues of social justice with bird and habitat studies is “disruptive” (RT-HP1). Mrs Bullock explains: “I would do it [the focus on democracy and justice] after the study was complete – so we could enter the ‘fantasy world’ and concentrate on the Life Skills (RT-HP2).

In support of this, Mrs Bulcock recommended a re-arranging of the pages of the *Hadedda Island Big Book* so that habitats are studied first, with the democracy issues following that. She also recommended adapting a very tightly focused learning programme, a maximum of two weeks long, which focuses on only four habitats of *Hadedda Island*. Alternatively, Mrs Bullock suggested using as much time as possible and choosing only one habitat and studying it in detail because learners will have the opportunity to study other habitats in higher grades.

Both teachers requested more information on voting, the Constitution and how parliament works. This would not need to be too detailed, however, as such work is only introductory at Grade 4 level (TI-HP). They also recommended including the mindmap (see Appendix W) of selected pages that I had provided as this was “invaluable” in helping them plan their activities (TI-HP).

5.6 THE CONTEXT OF NOGQAZA PRIMARY SCHOOL

Nogqaza Primary School caters for 687 boys and girls from Grades 1 – 7. The school is located in KwaMevana Township, a low-income area on the periphery of Howick town centre and has been in existence since 1940 when a local Methodist preacher, Mevana Buthelezi, started a school for the many children in the area who were just staying at home.

Many of the school’s learners live nearby in KwaMevana Township whilst others come from outlying areas and nearby informal settlements. According to a teacher at the school, these children face many practical difficulties in their education such as illiterate parents who are unable to assist with homework, alcoholism in the home, some learners are orphans being raised by grandmothers and others have many chores at home and do not have the time to do schoolwork. Some learners, however, come from homes in which “... their parents give them warmth and are supportive to work of their children that is done at school” (SQ-NP).

As a state-run school, Nogqaza Primary School relies on government subsidy, school fees and donations but, due to very limited parental support, additional fundraising events and school-community activities seldom take place. Mrs Ntshingila mentions playing cassettes and wearing casual clothes on Spring Day as examples of internal fundraising events (SQ-NP). Both teachers

participating in the study emphasise that it is very challenging to teach in this type of environment because, "... pupils come from poor families ... they don't concentrate when I'm teaching because of hunger" (TP-NP2) and, "... they are not cared [for] by their parents" (TP-NP1). They explain that "... Government said that the schools are for School Governing Body [to manage]. In our school that does not exist" (SQ-NP).



Figure 5.8 View of the main entrance to Nogqaza Primary School showing litter in the foreground, security gates and, in the background, the school buildings.

The two teachers participating in this study identify "the Principal only" (TP-NP1 and 2) as being supportive of curriculum changes in the school although they later commented that "... very little is known even by the Principal..." (SQ-NP). Poor communication and inadequate follow-up to training workshops leads the teachers participating in this study to state: "We are still confused. Educators of the school are not interested if we come together" (SQ-NP). They add that OBE requires teachers to use "charts" and "examples" to which they do not have access, and "... our children are not interested in learning ... They are dull, no interest in most of them. They are lazy. Even if we take them to sports field some run away" (SQ-NP).

The staff of Nogqaza Primary School attended OBE training in 2000 at the Indumiso College of Education in Pietermaritzburg. They report that, "It took five days only for the whole curriculum. We remained unclear in many things even the planning, assessment, how to assess, what to assess. Even today we are still not clear" (SQ-NP).

Mrs Ntshingila has been teaching for 26 years. She has a Primary Teacher's Diploma (PTD) and is currently teaching Grade 4s at Nogqaza Primary School. She has 41 isiZulu-speaking learners in her class, whose ages range from 9 to 12 years, and she is responsible for teaching Languages, Literacy and Communication, Mathematical Literacy, Mathematics and Mathematical Science, Natural Science, Human and Social Science, Life Orientation and Arts and Culture (TP-NP1).

During the study, Mrs Ntshingila indicated that she and her colleagues are not clear or confident about Curriculum 2005 and the expectations it places on teachers. When asked to describe her

understanding of OBE, she explained: "New words for subjects, teachers and pupils; ... OBE is learner centred, working in groups. We assess learners; curriculum instead of syllabus." (TP-NP1).

Mrs Ntshingila states that the main teaching methods she uses are leading "discussion from the known to the unknown", "giving the examples of what we are going to do" and "work[ing] with learners in groups" (TP-NP1). Flashcards, learners' books, library books, picture books and worksheets are the learning support materials that she identifies as being most commonly used in her teaching practice.

When asked to describe an environmental problem in or nearby the school, both teachers identified security as a significant problem. Vandalism of school buildings and property by members of the local community results in cut fences, theft of vegetables from the school garden, breaking of windows, and destruction of classroom desks and cupboards.

5.7 EARLY INTERACTIONS

On February 17, 2003, Zanele Xaba² and I made a preliminary visit to Nogqaza Primary School. No appointment had been made as I was unable to locate the school's telephone number in the telephone directory, but we nonetheless succeeded in meeting briefly with first the Deputy Principal and then the Principal. The Principal, Mr Zondi, appeared obliging and interested in the *Hadedea Island* project and expressed enthusiasm at being able to work with staff from the Umgeni Valley Project³. Mr Zondi permitted his Grade 4 teachers to participate in the study, he undertook to inform them of the project and we agreed to meet the following week.

However, when Xaba and I returned the following week, Mr Zondi had not yet informed the teachers and both appeared very reserved and non-committal when we introduced ourselves and the *Hadedea Island* project. I requested ten minutes immediately after school to show the teachers the draft copy of *The Hadedea Island Big Book* and outline what their participation in the study could involve. This interaction left me troubled by the prospect of future interactions in the study because both teachers appeared perplexed and non-responsive to the idea of exploring human rights and democracy with their learners, one teacher appeared to doze during the informal discussion, and the other asked if learners must memorise the whole book. Both admitted to knowing nothing about the RNCS and were reluctant to meet outside of school hours to attend a proposed focus group meeting with other teachers involved with the study (RJA).

²Xaba was an isiZulu-speaking colleague in Share-Net who was also part of a learnership programme with the Rhodes Environmental Education Unit and about to commence a separate action research project.

³In recent years, two staff members of WESSA, working at Umgeni Valley, had worked closely with Nogqaza Primary School on various environmental education projects. This link between the school and my location as researcher seemed to be a positive factor in re-establishing a relationship with the school for the pilot phase of the *Hadedea Island Big Book*.

Xaba shared my concerns about the motivation and / or reliability of the teachers in working with the *Hadedea Island Big Book* and the possible consequences this could hold for the study which required completion within a prescribed time frame. However, after much deliberation with colleagues, I decided to pursue interactions with Nogqaza Primary School, primarily because its educational context would be a realistic check for me during the development of *Hadedea Island* materials which, due to their naturally creative and generative nature, could easily lead me to lose sight of the challenging realities of classroom practice in many schools in South Africa.

Despite my concerns, the interactions and activities described in the following sections reveal that the Grade 4 teachers at Nogqaza Primary School did indeed respond to the challenges and opportunities of *Hadedea Island*. The process of orientating the teachers to the materials, establishing a working relationship with them and slowly building their confidence to use the materials according to their own needs and intentions unfolded more slowly than I had anticipated, yet the resultant experience (for teachers, learners and researcher) was productive and illuminating.

5.8 TEACHERS OF NOGQAZA PRIMARY SCHOOL PLAN AND USE A LEARNING PROGRAMME

5.8.1 Planning the classroom activities

After the early interactions described above (see Section 5.7), both of the Grade 4 teachers of Nogqaza Primary School indicated that they required assistance with planning their *Hadedea Island* classroom activities, especially with regard to Learning Area links and outcomes (RJB). Through further informal questioning it became evident to me that the teachers' lack of confidence in working with C2005, their unfamiliarity with the RNCS (especially its learning outcomes and assessment standards) and their generally limited access to and understanding of resource-based learning approaches, made it difficult for them to initiate lesson planning with the *Hadedea Island* materials.

In a meeting on April 9, 2003, I provided the teachers with the same mindmap teacher notes that I had previously developed for the teachers of Howick Preparatory School (see Appendix W). We then attempted to apply these creative ideas and suggested activities to the Department of Education's Learning Programme Unit planning template (see Appendix X). Both teachers said that they had worked with similar templates before but that they did not really understand or remember them (RJB).

I encouraged Mrs Ntshingila to fill in the planning template and attempted to play a passive role in the discussion so as to lead the teachers into their *own* planning rather than rely on activities and

curriculum links that I had previously envisaged. This approach proved to be unsuccessful as neither teacher had experience of the terminology of the RNCS or the confidence to plan spontaneously in the presence of an outside educator who they regarded as being better qualified and more informed than them.

Together, Mrs Ntshingila, Mrs Taylor and I focused on the Learning Area of Life Orientation, identifying Learning Outcomes that would be relevant to *Hadedda Island*. We identified Learning Outcomes 1, 2 and 3, and then considered the Assessment Standards of Learning Outcome 1. These were filled in on the planning template by Mrs Ntshingila. This process, however, did little to practically guide or inspire the teachers as to what classroom activities they could use as it appeared instead to be a procedural exercise which intimidated the teachers and constrained their interactions with the *Hadedda Island Big Book*.

I was struck (in this particular situation) by the ineffectiveness of the planning template to stimulate authentic and contextually relevant curriculum activities. Rather than facilitate planning, the columns seemed to result in the planning of contrived or disjointed activities that arose from a narrow focus on a pre-selected Assessment Standard, instead of from a focus on learners' needs and the classroom context (RJB). For the teachers at Howick Primary School, there had been very little interaction between the conceptual exercise of identifying curriculum links with the *Hadedda Island Big Book* and the practical task of deciding what activities would be suitable in the classroom.

To offer support and explore alternatives of developing teacher guidelines, I adapted the abovementioned mindmap teacher notes (see Appendix W) with a specific focus on the Learning Area of Life Orientation, Learning Outcome 2 (see Appendix Z). I emphasised to the teachers that this was an example of what be done, and that they should refer to it as a guide showing possibilities, not as a plan. The tabulated layout of these pages (in relation to the mindmap approach) was appreciated by the teachers who began to show greater clarity and independence in their planning.

5.8.2 Teachers apply their planning to classroom activities

Mrs Ntshingila and Mrs Taylor spent a total of six teaching weeks working on activities related to the *Hadedda Island Big Book* and explain that they focused on the book for approximately three days per week. This period was, however, very disjointed for a variety of reasons. The months of April and May, when the two teachers commenced work on *Hadedda Island*, were disrupted by the Easter vacation and public holidays that fell outside of the school break. Furthermore, the theme was slow to gain momentum as classroom activities were disrupted when teachers were absent from school. One teacher missed two days of school due to a tooth extraction, and the following week both teachers had the day off school to attend a funeral, and another teaching day was lost to the whole

school for the memorial service of a Foundation Phase learner who had tragically been killed in a road accident (RJB).

Despite these interruptions, the teachers worked systematically through their planned learning programme over the six weeks. They initiated the *Hadedea Island* theme with a bird-naming exercise, building on learners' prior knowledge: "We just introduced the names of the birds. We talked about the names of the birds in their environment ... the birds they are used to see around the school and in their homes" (TI-NP). Building on this, the class then named the habitats in which these and other birds live such as forests, rivers and urban areas.

After this introductory sequence of lessons on birds and their habitats, the teachers started using the *Hadedea Island Big Book*. They explain that they worked through the book in stages and did not read through it all during one lesson. Instead, the teachers and learners read two or three pages per lesson, spending the rest of the time examining each illustration, discussing what they could see and taking turns to read aloud from the *Hadedea Island Big Book* (TI-NP)

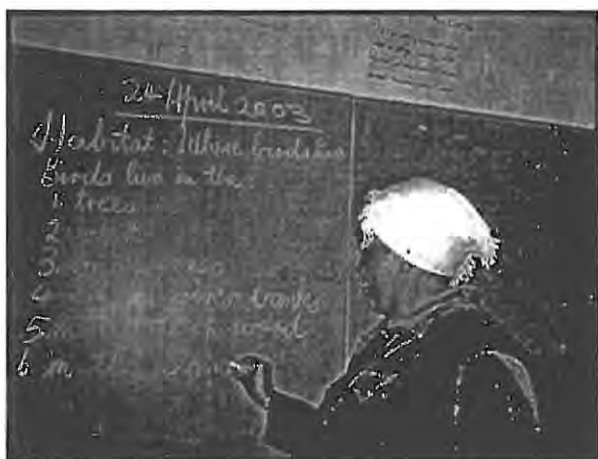


Figure 5.9 "The teacher wrote the notes while the learners are giving the kinds of birds in their environment" (Mrs Ntshingila).



Figure 5.10 "We are discussing the different things which are here in Hadedea Island, like trees, birds, different kinds of beaks. I drew these pictures to show the different birds" (Mrs Taylor).

In a lesson I observed on May 9, 2003 with Mrs Taylor's class, learners were given an A5 page of notes on bird adaptations and beaks, photocopied from the *Science Alive* text book. The focus of the lesson was 'birds have different beaks because they eat different things' (RJB). After reading the worksheet quietly to themselves, followed by a brief question and answer session about this topic, learners were given a photocopy of page three of the *Hadedea Island Big Book* which shows the Hadedea ibis talking to the other birds. Mrs Taylor linked this page to the focus on bird beaks and the class examined the illustration closely to identify different types of beaks.

The lesson then flowed into a discussion about leadership. Mrs Taylor asked questions such as: "Does the Hadeda have the right to tell the others what to do?" (RJB). Responses from the learners were varied such as "Yes, she has the right because the other birds voted for her" and "Yes, because she is the loudest".

Mrs Taylor then asked what tone the Hadeda would use and learners imagined (and in some cases acted out) how they thought the Hadeda would speak. This session was concluded by Mrs Taylor explaining to her learners: "You must not talk harsh – you must talk nicely" (RJB).

Several learners then had a turn to read the page aloud to the rest of the class before commencing the next activity which was to complete a worksheet (also from *Science Alive* text book) about three different kinds of bird beaks (see Appendix M).

In another lesson I observed, Mrs Ntshingila focused on 'kinds of birds in our environment' (RJB). The lesson was dominated by teacher questioning and learners responding to questions about bird characteristics and the appearance of Hadeda Island. The learners' responses were very quick and confident and it appeared that this lesson was a summary of earlier lessons for the purposes of my classroom observation.

The class was divided into three groups and each group had a chance to read pages one to three aloud. All groups, after reading page two about a 'cacophony', made animated squawking sounds to demonstrate the concept and the new word they had learned.

This reading activity was directly followed by a hasty classroom voting session. Mrs Ntshingila asked the class which 'bird' in the class they would choose to "represent your needs and choice". Two learners were nominated, learners raised their hands to vote for one of the two nominees, and the 'winner' was announced.

After this, learners continued to work in three groups on a bird adaptation worksheet. The pronunciation of bird names and bird-related terminology proved to be an obstacle for both teacher and learners during this task. Nonetheless, learners appeared interested in the illustrations and text of the bird field guide they had been allocated and they engaged diligently with the worksheet (RJB). Learners were given a few minutes on this task before having to report back to the rest of the class what type of beaks they had been able to identify.

Samples of learners' work (see Appendix M) taken from both classes showed a predominance of (i) handwritten notes, (ii) listing (such as bird characteristics and habitats), (iii) short questions for learners to complete and (iv) hand-drawn pictures of birds. Of the available samples, all learners

appeared to have spent much time on these illustrations which were executed with much attention to detail.

Human rights was another key focus for both teachers. Mrs Ntshingila reports:

We did the rights from the *Hadedda Island* book when the birds want to fight for their rights. We just get in then, as for Human and Social Sciences because they have rights, their rights, human rights.... And even Life Orientation says they have their rights. We bring that together (TI-NP).

Mrs Ntshingila and her learners spent a week on this focus. As described above, learners conducted voting in their classes for monitors and they, "... go then to read how do birds choose their representatives in Hadedda Island" (TI-NP).

Mrs Taylor, in response to this focus on human rights, reports discussing with her learners the right to have a home. She adds that learners know their rights and therefore understood this discussion very well (TI-NP).

5.8.3 Accompanying learning support materials

Both teachers made use of their existing Grade 4 textbook, *Science Alive* to support the *Hadedda Island* activities. The text book's section on birds correlated well with the opportunity, through *Hadedda Island*, to study birds' beaks, feet and adaptations. The teachers were hence able to use the textbook to consolidate topics discussed whilst looking at pages from the *Hadedda Island Big Book*.

Parts of the *Wild About Birds* teacher pack which I had provided for the teachers at an early stage of their planning, was used in support of *Hadedda Island* activities. The teachers used the full-colour posters from the pack as well as the interactive cassette of bird sounds which Mrs Ntshingila reports was very useful because "... they heard the noise of the birds which they didn't know" and the learners enjoyed listening to and imitating the sounds (TI-NP). Neither teacher, however, referred to the collection of lesson ideas and activities which the *Wild About Birds* pack also contains (TI-NP).

The teachers also made use of the local municipal library to access a field guide to the birds of southern Africa. This was used to assist learners in completing a worksheet on bird adaptations: learners had to use the field guide to find the names of bird species which were adapted to seed-eating, flesh-eating or fish-catching (see Figure 5.11).



Figure 5.11 Learners complete a worksheet on bird adaptations, assisted by a field guide on birds of Southern Africa which their teachers borrowed from the local municipal library.

5.8.4 Curriculum links

Both teachers agree that the *Hadedea Island* activities corresponded best with the Learning Areas of Natural Sciences, Life Orientation and Languages. They also feel confident that the requirements of these Learning Areas for Grade 4 have been met through their work with the *Hadedea Island Big Book*. Mrs Ntshingila explains this was made possible, "... because of the pictures, listen at radio cassette [to the] different noises made by birds, seeing birds' different beaks, feathers and claws" (RT:NP).

In their summary of classroom activities completed in response to the *Hadedea Island Big Book* (see Appendix Y), Mrs Ntshingila and Mrs Taylor identified Learning Outcome 2 of Natural Science as a significant curriculum link. The Learning Outcome states that "The learner will know and be able to interpret and apply scientific, technological and environmental knowledge" (DoE, 2002:29 – Natural Sciences). The first Assessment Standard they identified in relation to this was: "The learner recalls meaningful information, at the minimum uses own most fluent language to name and describe objects, materials and organisms" (*ibid*:36). This, they stated, would be achieved in their classroom context through the use of: "... *Science Alive* and pictures in *Hadedea Island* to discuss about the different kinds of birds will (*sic.*) see in our environment and things we see in the *Hadedea Island* pictures and their habitat" (TP-NP). The second Assessment Standard, "Learners sort objects and organisms by a visible property" (*ibid.*) was demonstrated through discussion between teacher and learners about "the different beaks adapted to the kind of food they eat, and claws, feathers, sound" (TI-NP).

Both teachers also identified Life Orientation as a Learning Area directly supported by the *Hadedea Island* materials. Mrs Ntshingila explains this is because, "...there are rights for the birds and rights for the people". (TI-NP). Although not articulated by either teacher, Mrs Ntshingila's comment corresponds well with Learning Outcome 2 of Life Orientation: "The learner will be able to

demonstrate an understanding of and commitment to constitutional rights and responsibilities, and show an understanding of diverse cultures and religions” (DoE,2002:25 – Life Orientation).

The Languages Learning Area was also a main focus for the teachers in using the *Hadedea Island Big Book*. Much time was spent reading and re-reading pages of the text and Mrs Ntshingila pointed out that this was time consuming because the learners read very slowly and all groups had to have a turn to read aloud (TI-NP). Such activities do, however, provide strong support for the attainment of Learning Outcomes prescribed for English as a First Additional Language, especially: Learning Outcome 1: “The learner will be able to listen for information and enjoyment, and respond appropriately and critically in a wide range of situations”; Learning Outcome 3: “The learner will be able to read and view for information and enjoyment, and respond critically to the aesthetic, cultural and emotional values in texts” (DoE, 2002:48 – English – 1st Additional Language).



Figure 5.12 “Here they are reading the page ‘the Hadedea ibis is loudest of all’ in groups. We work a lot in groups because it helps the shy pupils” (Mrs Taylor).



Figure 5.13 They are imitating the flight of birds. I asked them to show how birds fly, based on the page when birds fly home” (Mrs Taylor).



Figure 5.14 “Here they are making noise of Hadedea bird Haa-haa-de-da. That makes them laugh”. (Mrs Ntshingila).



Figure 5.15 A learner has a turn to read one verse of *The Hadedea Island Big Book* in front of the class.

Until my interactions with them around the *Hadedea Island* materials, neither teacher had heard about the RNCS or its 1st Principle. This is not surprising as, at the time of commencing this study, the RNCS had been publicly available for approximately nine months, no departmental training had yet been initiated and the RNCS documents had not been circulated to schools in the province.

During a brief conversation about the RNCS 1st Principle (TI-NP), it became apparent to me that the teachers were not at all familiar with the concepts embedded in this Principle Statement. Mrs Ntshingila commented: "We are not clear" (TI-NP). Later, in discussing what I presented as "the relationship between nature and justice", she recalled how they had encountered this idea during an earlier visit to the Howick Museum where learners were taught that, "They mustn't throw things in the water, because all that is nature. They mustn't burn fires, because all that is there by Umgeni Valley is a nature" (TI-NP). The teachers thus seemed very familiar with conventional attitudes to nature conservation and, as described in Section 5.8.2, advocated human rights and justice. However, there was little evidence to suggest that they were able to articulate *the relationship* between these aspects and translate this orientation into their teaching practice.

5.8.5 Assessment opportunities

Similar to Howick Preparatory School, the teachers at Nogqaza Primary School did very little formal assessment of learners based on their interactions with the *Hadedea Island Big Book*. Mrs Ntshingila reports that she used a worksheet to assess her learners: "... to fill in about types [of birds]. For instance, the kinds of birds, the bird of prey, the seed eater, then on the other side of the worksheet they wrote what do they eat...." (TI-NP). These were later marked by learners when Mrs Ntshingila read the answers aloud from the front of the classroom.

Samples of learners' work indicate that a form of assessment was conducted on May 15, 2003 when learners copied ten questions related to bird features and adaptations into their exercise books. In some cases, however, learners wrote the questions but did not complete the answers (LW-NP).

Mrs Taylor, initially uncertain of the meaning of 'assessment', stated that she had not conducted any assessment. Later, however, through a clarifying conversation, she added that she had given her learners "some tests" (TI-NP). These were not evident in the samples of learners' work available to me.

5.8.6 Teacher reflections on using *The Hadedea Island Big Book*

When asked to reflect on their initial impressions of the *Hadedea Island Big Book*, Mrs Ntshingila responded: "We thought that it is hard to do the work, but as we go on we see that it is ... a little bit nicer ... because it promotes reading sometimes" (TI-NP).

Mrs Ntshingila commented that their lack of teaching materials made the task of using the *Hadedea Island Big Book* very daunting and initially they were doubtful that they would be able to produce what was required: "Even to do the worksheet, it is difficult to do the worksheet" (TI-NP). For this reason, both teachers agreed that teaching materials which provide prepared worksheets are the most beneficial and they expressed great interest in obtaining a refined *Hadedea Island* pack from Share-Net that contains more lesson ideas and ready-made worksheets (TI-NP).

Both teachers pointed out that, although the *Hadedea Island* materials are well-suited to Grade 4 learners, language skills influenced the way they interacted with the book and activities. Some vocabulary used in the *Hadedea Island Big Book* was problematic as it was a barrier to teachers and learners.

This chapter has described the experiences during Phase Three of working with Howick Preparatory School and Noggaza Primary School around the *Hadedea Island Big Book*. Insights gained from these unique experiences are discussed in the following chapter, as well as earlier insights from Phase Two with Epworth School. Chapter Six thus marks the transition to Phase Four (see Figure 3.1) in which the information generated from school-based work is interpreted.



Chapter Six

Hatchlings: Research Findings



*Sometimes we simply have to keep our eyes
open and look carefully at individual cases -
not in the hope of proving anything, but rather
in the hope of learning something.*

Hans Eysenck (1976:9)

6.1 INTRODUCTION

The experiences of Epworth School during the development phase of this study, and of Nogqaza Primary School and Howick Preparatory School during the trial phase, gave rise to many insights and wide-ranging perspectives on the use of the *Hadedea Island Big Book* and its interface with the RNCS 1st Principle. In discussing and responding to these experiences in the light of the study's research question (see Section 1.4), I am guided by three main interwoven dimensions that have formed the fabric of this study: (i) a social epistemological perspective (ii) orientations to and experiences of curriculum and (iii) issues related to the design and use of learning support materials.

In this chapter, I reflect on the experiences of engagement with the *Hadedea Island Big Book* as generative processes within the uncertain terrain of a transformed / transforming curriculum. The discussion starts with a reflection on the contextually located nature of the experiences and how these factors shaped teachers' understandings and use of the *Hadedea Island Big Book*. I then consider how teachers' orientations to and experiences of curriculum directed the way in which the learning support materials were taken into use. Finally, the emerging findings of how the *Hadedea Island Big Book's* design influenced its use are discussed with a view to guiding further refinement of the materials with possible strategies to support teachers in using them.

6.2 HISTORICALLY FORMED PATTERNS SHAPE CURRENT PRACTICES

6.2.1 Context underpins practice

This discussion precedes others in the chapter because its elements permeate all subsequent discussions. Here, I draw attention to the diverse contexts of the participating schools and suggest how these dimensions have influenced the teaching and learning ethos of each school, teachers' responses to the *Hadedea Island Big Book* and the skills required to use it in supporting the development of environmentally-oriented Learning Programme Units. My intention here is not to provide a comparative analysis but to illuminate the diverse contexts and characterising dimensions within these. These diverse insights underpin all other experiences of the *Hadedea Island Big Book* as discussed in this study.

6.2.2 Current context is historically situated

In Section 2.2, I described how a social epistemological perspective could open up understandings of how socio-economic dimensions and "historically formed patterns of power relations" (Popkewitz, 1991:15) intertwine to create the context of schooling. Sections 2.3 and 2.4 then elaborated on how ideologies and structures associated with apartheid were overturned and replaced by a new government committed to democratising reforms. In turn, this led to transformation of the South

African schooling system through the curriculum policy reforms and realigned financial and management structures.

The history of each school's identity could not, however, be erased as quickly as policy was revised. Section 2.9 highlighted some of the challenging realities of current social practice, many of which are rooted in previous patterns of socio-political and economic inequalities.

Historically, as a school privileged within the apartheid education system, Howick Preparatory School has a background of being well-resourced and carefully managed, with well-qualified teachers able to guide their generally middle-income group learners through the State schooling system (Christie, 1991). Although the school now functions within a transforming education system, these defining characteristics remain largely intact. The school now pursues a learner-centred, outcomes-based approach to teaching with a continued emphasis on high quality work and commitment from teachers and learners. These standards are made realisable through the school's access to a wide range of resources, from sports fields to a computer centre and art room (TP-HP1 and 2; SQ-HP).

On the socio-economic spectrum of the schools in this study, Nogqaza Primary School and Epworth School are situated at different ends. Historically, Nogqaza Primary School was administered by the former Department of Education and Training and adhered to its curriculum. The school is located within an historically disadvantaged community which is currently grappling with the pervasive legacy of Bantu Education (see Section 5.6). Evidence of this historical context was seen during the classroom visits in this study when teachers generally maintained a dominant, authoritarian presence in the classroom and relied on facts-driven exercises.

As an independent school, Epworth School has, for several decades, been in a position to admit learners of all races and cultures. Its selection of learners has instead been economically determined as the high fees reserve the school for the small sector able to make such a financial commitment. The result, however, is an extraordinarily well-resourced teaching and learning environment with highly qualified staff working with a strong commitment to curriculum transformation. Such a context enabled the creative, exploratory work that took place around the *Hadedda Island Big Book* during Phase Two. Although initially uncertain of, and slightly daunted by, the prospect of piloting the new materials, the teachers were able to draw on the depth of their own schooling experience, professional qualifications and more recent training in C2005 to mediate their curriculum activities in a highly motivated, well-resourced and supportive school environment.

This summary of the three school's socio-economic and historical contexts (as specific to each case) provides a backdrop to the following sections' discussions on 'varying frames of reference' (6.2.3) and 'school ethos and management' (6.2.4).

6.2.3 Varying frames of reference

In all three schools, the ways in which the *Hadedea Island Big Book* was used were shaped by the teachers' and learners' past experiences, values, priorities and perceptions of education and environment. They were also shaped by the historically located identity and ethos of the school in its local community. These were the frames of reference that helped each person make meaning of the multiple narratives of the *Hadedea Island Big Book* (see Section 6.4).

The frames of reference for the teachers and majority of learners at Nogqaza Primary School (see Section 5.6) gave rise to a more localised emphasis during classroom activities such as learners listing bird species and habitats seen at home and at school (TI-NP). At Howick Preparatory School and Epworth School, however, several learners had travelled widely within South Africa or came from families with an interest in bird watching and conservation. These learners showed a more focused engagement with these dimensions of the *Hadedea Island Big Book* and were also able to share their knowledge and experiences with their peers.

Apart from their home contexts, teachers and learners could also draw on previous school experiences. In the previous year, the learners at Nogqaza Primary School (then in Grade 3) had visited the nearby Howick Museum where, according to Mrs Ntshingila, they received a strong conservation message (TI-NP). Other than this one excursion several months earlier, there was little evidence that the school was providing opportunities to broaden learners' frames of reference with regard to the environment¹.

In the cases of Howick Preparatory School and Epworth School, the teachers were working towards planned excursions. The teachers at Howick Preparatory School explained that, through *Hadedea Island*, their classroom studies of forest habitats and birds would prepare learners for the following term's excursion to the Dlinza Forest in northern KwaZulu-Natal. As part of the excursion, they anticipated walking along boardwalks in the forest canopy and observing birds in their natural habitat.

The Grade 4 learners at Epworth School were also looking forward to an excursion during the following term which would consolidate many of the topics and questions raised during their work on the *Hadedea Island Big Book*. The visit to Baynesfield Estate would include a wetland study, an opportunity to see Blue Cranes, and a walk with a Bushman tracker.

Excursions such as these appear to be valuable in supporting outcomes-based and learner-centred teaching and learning experiences. In the case of Nogqaza Primary School, the visit to the Howick

Museum gave the teachers and learners a reference point when they discussed issues related to the *Hadedda Island Big Book* (TI-NP). If considered within an active learning framework (O'Donoghue, 2000), the experience of a museum visit was valuable in providing a common path to mobilising learners' prior knowledge in preparation for subsequent learning experiences (see Section 5.8).

Drawing on research undertaken by Bernstein (1996), Taylor and Vinjevoold (1999:111) similarly discuss how the frames of reference for working-class children are usually "... embedded in the local context and personal experience of the learner", often with a dissonance between learning in school and those of everyday life. Middle-class children, however, are more generally able to draw not only on this 'everyday knowledge', but also on more formal, specialised knowledge gained through access to books, computers, travel experiences and home-based stimulation. Taylor and Vinjevoold (*ibid*:112) conclude that: "working class children have a greater distance to travel to acquire the elaborated language codes and specialised principles of classification which structure formal school knowledge"².

This insight is an important consideration in terms of the *Hadedda Island Big Book's* intention to support environmental learning processes. These are multi-dimensioned processes which require careful and sustained mediation within pedagogical processes (Janse van Rensburg & Lotz-Sisitka, 2000). For generative curriculum processes and an associated environmental learning, teachers and learners are aided by a knowledge base and the skills to recognise and respond to these multiple dimensions. Section 6.4 identifies the complexity and detail of environmental issues as an additional layer of the *Hadedda Island Big Book* requiring negotiated interpretation. When considering design issues and refinements of the *Hadedda Island* materials, it is thus necessary to consider the diverse contexts, differing frames of reference and skills that are likely to give rise to different learning experiences.

6.2.4 School ethos and management

Czerniewicz *et al.* (2000:29), citing Heneveld and Craig (1996) propose that attention to the complex interplay of school leadership, curriculum knowledge, teaching stability and management flexibility could lead to more effective use of learning support materials. In line with this, the NEEP-GET pilot project (Lotz-Sisitka & Raven, 2001:92) concluded that teachers' pedagogical style, their curriculum knowledge and the role of school principals and school governing bodies influence the potential for environmental learning in schools. The findings of *this* small-scale study on the *Hadedda Island Big*

¹ It is worth noting, however, that when I visited the school during National Water Week, all learners were in the courtyard listening to a talk by staff of Umngeni Water. Although unable to attend the presentation, I assumed that the education staff were addressing issues of water use and sanitation.

² I am cautious of Taylor and Vinjevoold's use, here, of terms such as "elaborated" and "specialised principles" which may be interpreted as a judgemental classification. The intention is not to suggest that different codes and contexts of their use equate to a deficit amongst some learners when in formal school code contexts. Rather, I draw on this reference merely to note that different codes enable different practices.

Book concur with these trends and suggest that a school's ethos and leadership influences the way teachers mobilise curriculum policy.

The teachers at Epworth School described their principal as committed to curriculum changes and supportive of the staff's efforts to keep abreast of policy changes and their implications for classroom practice (see Section 4.3.3). When approached to participate in this study, both teachers were enthusiastic, motivated and interested to apply their early understandings of the RNCS to a project such as *Hadedea Island* (TI-ES; RJA). The school's regular practice of working with student teachers, visitors and parents, and the staff's commitment to improving their practice by interacting with other professionals, made it possible to work spontaneously and critically with not only the participating teachers, but other teachers in the school who also expressed an interest in the study. This working environment was not only conducive to supporting my interactions as researcher and materials developer, but also to supporting creative curriculum planning by the teachers (see Section 4.4).

The principals of Howick Preparatory School and Nogqaza Primary School were similarly supportive of this study being conducted in their schools (RJA). However, the teachers at Nogqaza Primary School explained that the staff – including the principal – were unclear on curriculum matters and seldom interacted professionally with policy documents or their implications for classroom practice (TI-NP; SQ-NP). Mrs Taylor and Mrs Ntshingila were consequently reserved and non-committal in their early interactions with me around the *Hadedea Island Big Book*, and required more supportive engagement than I had originally envisaged.

Added to this were the school's patterns of classroom management, timetabling and lesson plans. The continuity of lessons using the *Hadedea Island Big Book* was disrupted due to school holidays, whole school events and teachers being absent from school, making it difficult for learners to pick up on ideas and to see these through (see Section 5.8). Drawing on earlier and more comprehensive studies such as the NEEP-GET pilot project (Lotz-Sisitka and Raven, 2001) and the President's Education Initiative Research Project (Taylor and Vinjevoold, 1999), it can be assumed that these conditions reveal the school's regular teaching practice. These realities need to be carefully considered when making refinements to the draft version of the *Hadedea Island Big Book* or when developing any other learning support materials in the South African school context.

6.3 CURRICULUM CHALLENGES AND OPPORTUNITIES

6.3.1 Working with teachers in a changing curriculum

Through interacting with teachers during this study, it became evident that teachers' understandings of, and perspectives on, the changing curriculum are wide ranging. As introduced in Section 2.8, these perspectives are seen to influence the way in which curriculum activities are developed and

were uncertain and reserved (RJB). At Howick Preparatory School, the teachers appeared committed to the overarching ideas in the new curriculum (learner-centred, outcomes-based approaches) but were less certain about the structure and logistical challenges of C2005 (TI-HP). These findings resonate with the findings of the Review Committee on C2005 (Chisholm *et al*, 2000:76) which report that: "Generally, teachers have a positive attitude to the intent and purposes of C2005 and are taking very seriously the challenges of implementation".

From the outset, Mrs Oftebro and Mr Sliedrecht at Epworth School expressed their enthusiasm for the *Hadedea Island Big Book*, based on their commitment to learner-centred, outcomes-based education and an integrated teaching approach. They were able to discuss confidently the curriculum possibilities associated with the materials and, despite initial uncertainties around what I 'expected' them to do (TI-ES1), both were able to develop Learning Programme Units that deepened learners' understandings of birds in their habitats and democratic processes, that required learners to work creatively and scientifically in groups and individually, and that contributed to a progression of learning throughout the year (see Section 4.4).

Without exception, the six teachers participating in this study reported that they had experienced much uncertainty when the *Hadedea Island Big Book* was initially presented to them, and that they would have appreciated a clearer orientation and suggestions for curriculum activities. Despite this, the teachers successfully developed a variety of classroom activities and appeared to require little intervention or support in planning lessons.

A tension then exists in decision-making to guide further refinement of the *Hadedea Island* materials. The provision of clear teacher guidelines, lesson plans and ready-made worksheets would supply the apparently sought-after support requested by teachers, and would also help to guide the development of environmentally focused Learning Programme Units. However, this approach could be criticised for its prescriptiveness and potential to stifle other teaching and learning responses that could arise from the use of the *Hadedea Island Big Book*.

Recent studies in South African classrooms on the role of learning support materials may offer some guidance. Lotz-Sisitka and Raven (2001:96) report after the NEEP-GET pilot research project that, "... it is not only the development of resource materials that needs attention in curriculum implementation processes, but also the skills to select, use and adapt the materials". With regard to the *Hadedea Island Big Book* and the range of Share-Net materials in general, this would suggest that attention needs to be given not only to *developing* contextually relevant curriculum support materials, but also to *interacting with and supporting* teachers to make decisions about *how to use* the materials. This could be in the form of personal interactions (such as teacher workshops and school visits) to mediate the materials' use, professional development opportunities (such as modules within

visits) to mediate the materials' use, professional development opportunities (such as modules within broader environmental education courses) or prepared, written mediations of the materials (such as a teacher support pack with lesson plans and worksheets).

It was mainly around the emphasis on the RNCS 1st Principle that the teachers requested further clarification. Teachers were unfamiliar with developing curriculum activities with an environmental perspective that foregrounded dimensions such as democratic processes and social justice. It should be noted that this unfamiliarity was not because teachers held conflicting views of environment or could not relate to the broader view, but rather because they had never integrated this view into their teaching practice. There thus appeared to be a mismatch between the understandings of environment held by teachers (which included issues of pollution, community awareness, water use, good sanitation and vandalism, as described in Sections 4.3.4, 5.2.3 and 5.6) and how environment actually came to be investigated and understood through the Learning Programme Units they developed (which typically focused on Natural Sciences-oriented topics such as bird characteristics, astronomy, natural disasters and ocean life; see Sections 4.3.4 and 5.2.3).

An arising challenge then, in supporting the development of Learning Programme Units from the environmentally-oriented outcomes of all Learning Areas, is in supporting teachers to conceptualise relevant activities and then stimulate a synergy between them so that learners' understandings of the interplay between the multiple dimensions of environmental issues can be deepened. In the case of Epworth School, the teachers interacted closely with me in the early stages of their planning when I emphasised the intention to use the materials to deepen understandings of a broadening view of environment. Support and conceptual clarification at this early stage appears to have enabled a deeper and more integrated exploration of environmental issues through their resultant Learning Programme Units.

During Phase Three, in the case of Howick Preparatory School, support required by Mrs Bulcock and Mrs Bullock was centred mainly on selecting and planning what Mrs Bulcock recognised as the vast potential of the *Hadedea Island Big Book* (TI-HP). Both teachers were supportive of the intention to use the *Hadedea Island Big Book* to integrate learning about birds and habitats with learning about democratic processes and social justice. However, the resultant Learning Programme Unit contained fairly isolated experiences of (i) studying birds and habitats, (ii) reading the *Hadedea Island Big Book*, and (iii) learning about voting procedures and casting a vote for the leader of the island. The teachers cited time constraints and the fact that they had had to accommodate the *Hadedea Island Big Book* into their already full term plan when approached to participate in this study, as reasons for the Learning Programme Unit's under-developed conclusion. It is also likely that the superimposition of the *Hadedea Island Big Book* onto an existing (predominantly Natural Sciences) Learning Programme Unit stifled some of the material's opportunities to open up more socially integrated considerations of environmental issues.

As described in Section 5.8.1, the teachers of Nogqaza Primary School required greater levels of support in becoming orientated to the concept, design and pedagogical intention of the *Hadedea Island Big Book*, relating this to the framework of C2005, and then developing a Learning Programme Unit for their class. The activities which Mrs Taylor and Mrs Ntshingila developed prioritised vocabulary development and reading skills and were successful in engaging learners in creative ways to develop these skills. This focus, however, tended to steer whole-class readings of the *Hadedea Island Big Book* towards a linguistic experience and away from the book's other potential of opening up discussion around socio-ecological issues and more.

Other activities at Nogqaza Primary School were strongly situated either within a Natural Sciences focus, supported by the existing Grade 4 Natural Sciences textbook, or within a focus on voting procedure and human rights. Consequently, the sum of the curriculum activities appeared in three distinct streams: language skills, nature studies and social issues. While the teachers report that they 'brought together' the foci on birds and human rights (TI-NP), I did not observe any evidence of this in samples of learners' work or during classroom observation sessions. This suggests that, although the teachers were aware of, and committed to, the expectation to integrate bird and habitat studies with social issues in order to deepen understandings of environmental issues and risks, they required more direct support in realising this plan. Both teachers referred to the guiding mindmap I had prepared previously for the teachers at Howick Preparatory School (see Section 5.8.1 and Appendix W) but, in retrospect, these annotated illustrations were too disjointed to support teachers in developing an integrated Learning Programme Unit around the relationship between a healthy environment and social justice.

The following section reflects in greater detail on the extent to which the curriculum activities developed by teachers around the *Hadedea Island Big Book* articulated with the vision of the RNCS 1st Principle.

6.3.2 Curriculum experiences that articulate with the RNCS 1st Principle

It became apparent during this study that many of the integrating activities that best stimulated understandings of the relationship between human rights, a healthy environment, social justice and inclusivity built on learners' prior experience and then created new experiences through substantial activities such as action projects, role plays or excursions. I use the term 'substantial activities' to distinguish situations of learning about interconnectedness of environmental dimensions (for example, role-playing a bird and including habitat-specific environmental issues in its election campaign) from the other more isolated and superficial classroom activities that also take place (for example, drawing imaginary birds from thumbprints).

This finding corresponds closely with earlier findings of the Learning for Sustainability project (Janse van Rensburg & Lotz-Sisitka, 2000) and the NEEP-GET pilot project (Lotz-Sisitka & Raven, 2001) which found that attempts to integrate environmental learning in the curriculum often resulted in superficial activities that did not contribute to a wider learning programme. The Learning for Sustainability project pointed out that this is less likely to occur when teachers have strong content knowledge, clear understandings of environmental issues and risks, and curriculum planning skills (see Section 2.7). Similarly, Taylor and Vinjevold (1999:233) report that many learning materials "... generally provide for *ad hoc* activities, which may or may not be connected to the level of learning required". They further caution that, without a strategy to weave these "interesting activities" into a systematic learning programme, learners are unlikely to learn effectively (*ibid.*).

Despite this, the isolated and sometimes trivial activities observed in classrooms using the *Hadeda Island Big Book* nevertheless seemed helpful in establishing core knowledge, orientating learners to a particular focus, stimulating creativity or establishing discipline or rigour in classroom practice. However, for the type of teaching and learning promoted in the RNCS 1st Principle to take place, these 'units' of experience need to be brought into interplay to produce a developing synergy that allows deeper understandings of environmental issues to arise.

This synergy was effectively generated through Epworth School's Grade 4 assembly performance and wetland scenario activity (see Section 4.4.3). Both activities required learners to use their knowledge of species, ecosystems and communities' needs to identify possible origins of conflict or injustice. They then had to collaborate with their peers to propose solutions to these issues and ensure that all parties' interests were considered. Mrs Oftebro and Mr Sleidricht confirm that their learners "grappled with these issues" and came to see the issue of wetland use from multiple perspectives (TI-ES2).

The teaching and learning activities at Howick Preparatory School and Nogqaza Primary School succeeded in laying a foundation for this type of synergy but did not fully realise its potential. The reasons for this are varied and complex, requiring more detailed review that must fall beyond the scope of this report's focus. (Sections 2.8 and 2.9 may provide a starting point for further discussion of these trends.) However, the following points summarise factors (highlighted through interaction with teachers) that appeared to contribute to the limited exploration of environmental complexity through using the *Hadeda Island Big Book*.

- o **Time** Both teachers at Howick Preparatory School cite time constraints as the most limiting factors. Mrs Bulcock points out that the *Hadeda Island Big Book* is so full of teaching opportunities that she "...just ran out of time" (TI-HP). Similarly, the teachers at Nogqaza Primary School report that: "In six weeks we were rushing". They explain that learners' slow reading and writing abilities required them to spend more time on each activity (TI-N).

- o **Getting side-tracked** According to the experience of the Howick Preparatory School teachers, the multiple opportunities in the *Hadedea Island Big Book* made it very easy to become side-tracked or distracted. Mrs Bullock, for instance, explains: "I was trying to do *Hadedea Island* but I actually forgot about *Hadedea Island* and focused on the habitats"³ (TI-HP).
- o **Dependence on existing materials** Teachers of both schools made use of their existing learning support materials and the *Wild About Birds* pack I had provided. Nogqaza Primary School used their regular *Science Alive 4* textbook and Howick Preparatory School used existing posters and worksheets on birds and habitats. All of these materials focused only on the 'Natural Sciences' dimension of bird and habitat studies. There were no available materials to promote or guide teaching and learning about the relationship between these 'ecological' issues and socio-economic factors such as development, technology, land-use or lifestyle patterns. As evidenced in the NEEP-GET pilot project (Lotz-Sisitka & Raven, 2001), teachers tend to rely on the learning support materials at their disposal (see Section 2.5.3.3). If the materials are centred around traditional 'bird studies' (or even more recent themes of 'democracy' and 'human rights'), without some sort of supporting material to illuminate their inter-relationships, it is unlikely that teachers will develop this perspective in their teaching practice.
- o **Difficult to assess** Both teachers at Howick Preparatory School comment that it is difficult to assess the extent of learners' understandings of environmental issues or their ability to take action⁴. They allude to the contradiction between what learners say in class in response to a theme or specific question, and what they actually demonstrate in their out-of-classroom conduct (TI-HP). Using the example of litter, the teachers explain that during lessons, learners discuss litter as an environmental problem, acknowledging that people should be responsible and not expect others to clean up after them. However, the school grounds after breaks are regularly full of litter.
- o **Unfamiliarity with environmental learning** As previously discussed, teachers working at the time of this study were unfamiliar with the RNCS and the integration of environment in all Learning Areas. They were aware of the existence of 'environment' as a phase organiser although no mention of this was made during any of my interactions with the teachers, nor is it evidenced in their lesson planning. Mrs Bullock voiced a strong commitment to conservation issues and environmental education, adding that it is: "...something that will eventually filter and feed through into the schools, because of the literature that's coming into

³ I find this comment interesting in the light of its underlying perspective regarding the *Hadedea Island Big Book*. The notion that the learning support material is 'something to be done' may detract from an alternative focus that prioritises using such materials to support Learning Programme Units in response to Learning Area Outcomes.

the schools, the textbooks and things" (TI-HP). Other participating teachers were able to identify local environmental issues, but showed little or no evidence of presenting or probing these issues in their lesson planning.

6.3.3 Links to Learning Areas and Learning Outcomes

In the cases of Epworth School and Howick Preparatory School, interactions around curriculum links, outcomes and assessment were always verbal and informal. I had elected not to provide or request teachers to work according to lesson planning templates because the study was more concerned with investigating how teachers would work with the *Hadedea Island Big Book* according to their regular practice than with investigating how they utilised formal planning templates. Hence, teachers were not required to present their classroom activities according to Learning Area links, Specific Outcomes or Assessment Criteria. Significantly, it was found that without this expectation, only the two teachers at Epworth School made use of formal planning templates. Even these did not show evidence of planning according to Specific Outcomes or with Assessment Criteria in mind. Most activities across all classrooms appeared to be based on previous years' work or to arise from the teachers' intuitive sense of what would be appropriate and well-received by their learners. As described in Section 4.4, Mrs Oftebro explained how she and Mr Sliedrecht planned their work around the *Hadedea Island Big Book* according to what they wanted to do with their learners, and were later excited to find how well it resonated with the Specific Outcomes of certain Learning Areas (TI-ES2).

Despite the lack of formalised, detailed curriculum planning in line with the requirements of various Learning Areas, the activities conducted in all three schools supported a broad range of Learning Area Outcomes. These are discussed in some detail below, and are summarised in Appendix Y.

In its discussion on the Natural Sciences in the Intermediate Phase, the Department of Education (2002:29 – Natural Sciences) emphasises that learners should become increasingly able to think sequentially, plan before action and "... describe simple associations between events – provided that the task involves materials or events which have already been worked with or experienced". Reflecting the RNCS 1st Principle, the Introduction to this same document (*ibid.*) states that: "The learner is more able to think in terms of how others might see things or experience situations, and thus is more able to deal with issues of bias and the impact of technology on society".

The potential scope of the *Hadedea Island Big Book* content readily supported this type of Natural Sciences study through activities such as role-playing a bird in habitat or participating in a class election process (a sequence of related events), conducting habitat studies with an emphasis on

⁴ This difficulty may have been exacerbated by the fact that classroom activities were not located in environmentally-oriented Specific Outcomes. This trend is recognised as significant and is further discussed in Sections 6.3.3, 6.3.4 and Chapter Seven.

how different species are affected through habitat disturbance or loss (associations between events) and considering bird adaptations (associations between things).

The Department of Education's (2002:4-5) introduction to the Life Orientation Learning Area states that:

The Learning Area's vision of individual growth is part of an effort to create a democratic society, a productive economy and an improved quality of life ... To address these issues, this Learning Area Statement deals with human rights as contained in the South African Constitution, social relationships and diverse cultures and religions.

All three schools participating in this study successfully (but to varying degrees of detail) used the *Hadedea Island Big Book* to support learning about human rights and democratic processes (see Sections 4.4, 5.4 and 5.8). This corresponds with Learning Outcome 2 of Life Orientation: "The learner is able to demonstrate an understanding of and commitment to constitutional rights and responsibilities and show an understanding of diverse cultures and religions.

The type of learning envisaged for the Life Orientation Learning Area articulates with the Social Sciences Learning Area (Geography) (DoE, 2002:48) which states that: "Learners in this Intermediate Phase are encouraged to ask key questions about the environment and resources and to seek answers, propose solutions and make appropriate decisions". The scope of the *Hadedea Island Big Book* seemed to provide a creative way of developing these skills in learners against a backdrop of social justice and democracy.

Epworth School made a direct link to the Technology Learning Area through the design and construction of bird feeders. Learning Outcome 1 identifies: "Designing, Making and Evaluating" as a "set of interrelated skills" that learners should acquire during this phase. An integrated approach extended the learning potential of this activity as learners were required to observe and sketch the birds that visited the feeders (Arts and Culture; Learning Outcome 1) (See Figure 4.8).

Epworth School's assembly performance (see Section 4.4.3 and Figures 4.9 and 4.10) linked to Learning Outcome 3 of the Arts and Culture Learning Area, and Nogqaza Primary School's singing and dramatisation of bird calls and movements (see Section 5.8 and Figures 5.12 – 5.14) linked to Learning Outcome 4.

Nogqaza Primary School made direct use of the *Hadedea Island Big Book* to support the Languages Learning Area (see Figure 5.15). Working in the context of English as a first additional language, learners were able to practice their English speaking and reading skills by modelling their responses on the text and general vocabulary of the *Hadedea Island Big Book* (Learning Outcomes 3 and 6). Beyond this emphasis on basic reading and pronunciation, the potential of the *Hadedea Island Big*

Book in supporting language appreciation and skills development was not thoroughly explored in any of the classrooms.

6.3.4 Assessment

Assessment has been the study's most under-developed aspect of curriculum work. None of the teachers showed evidence of curriculum planning in line with C2005's structure, namely Assessment Criteria, Range Statements and Performance Indicators. When asked directly about how they had assessed their learners, teachers were vague or explained why they had not conducted formal assessment.

The most formal assessment that took place at Epworth School was a quiz-type test on birds and their habitats (see Section 4.4). Continuous assessment was also made possible during the term through the generation of tangible work such as bird feeders which had to meet certain design requirements, the making of theatrical bird masks, the paintings of wetland scenes, the designing of *Hadedda Island* book covers and election posters.

At Nogqaza Primary School, Mrs Taylor seemed uncertain of what I meant by 'assessment', but we later clarified that a worksheet and a test had been used to assess learners (see Section 5.8). Samples of learners' work, however, reveal that these activities were very simple (mainly information recall or copying) and – in many cases – incomplete or unmarked.

The teachers at Howick Preparatory School did not provide any examples of assessment, citing time constraints as a reason for the under-developed Learning Programme Unit (TI-HP; RT-HP1). It is likely that the combination of time constraints and the multiple levels of interpretation and multiple possibilities for use of the *Hadedda Island Big Book* contributed to the lack of carefully considered assessment strategies. The interrelated nature of many aspects of environmental issues makes assessment more difficult than, for instance, the assessment of skills or factual knowledge.

Assessment is one of several dimensions to be considered in the ongoing development of a learning support material such as the *Hadedda Island Big Book*. Conceptual clarity, access to factual information to support activities, links to Learning Areas, Learning Outcomes and Assessment Standards, and templates to support planning are all elements that, individually, need to be meticulously planned and, collectively, need to combine to form an accessible, relevant, adaptable and stimulating learning support material that enables assessment of learners' attainment of Learning Outcomes.

6.4 THE MATERIAL'S DESIGN SHAPES ITS USE

6.4.1 Design in relation to the RNCS 1st Principle

In calling for curriculum activities that lead learners to consider the relationship between human rights, a healthy environment, social justice and inclusivity, the RNCS stimulates a need for teaching and learning materials to support such an orientation. The Department of Education (undated:12) further recommends that:

LSMs should build in measures that enable teachers and learners themselves to track performance and achievement of outcomes. This can be done through assessment exemplars, graded activities that require application of concepts etc.

In the light of these two points, this section (6.4) reflects on the content and design of the *Hadededa Island Big Book* in relation to the RNCS 1st Principle and considers how these features might stimulate generative processes of Learning Programme Unit development out of Learning Area Outcomes and Assessment Standards.

6.4.2 A metaphorical narrative

As outlined in Section 1.3 and shown in Appendix A, the *Hadededa Island Big Book* is a metaphorical text that uses personification of birds to stimulate learning about democratic processes, environmental responsibility and the significance of habitat diversity and protection. Before teachers can begin curriculum planning, they need to (i) grasp the basic metaphor (birds in habitats as people in communities), then (ii) reflect on the relationship between this metaphor and their own context and (iii) recognise the importance of encouraging learners to make the shift between the fantasy of *Hadededa Island* to their real, local context, and strategise ways to achieve this. After planning appropriate curriculum activities, teachers are then required to work with the *Hadededa Island* materials in such a way that their learners come to understand and relate to the metaphorical text.

The use of metaphor proved to be a key element in the emerging creativity associated with the *Hadededa Island Big Book*. The learners at Epworth School embraced the idea of fantasy from the outset and were able to formalise their visions of what the island was like in their book cover designs (see Figure 4.5). Learners became progressively more immersed in the island fantasy as they role-played selected birds, wrote their election speeches, wore bird masks and finally presented a themed assembly in which they invited the whole school to 'travel with them to Hadededa Island' (see Section 4.4.3).

The teachers at Howick Preparatory School did not develop the metaphorical aspect of the *Hadededa Island Big Book* and expressed disappointment at not having explored the creative possibilities of

this approach (TI-HP). The learners of Nogqaza Primary School enjoyed performing the song “Sizinyoni” (We are birds) and imitating bird calls and movements.

Despite its creative and conceptual value (see Section 4.2.1), the metaphorical narrative of the *Hadedda Island Big Book* also raised challenges for some teachers who struggled to conceptualise a Learning Programme Unit which required shifting between metaphorical and real contexts in order to explore the dimensions of environmental issues. Neither Howick Preparatory School nor Nogqaza Primary School developed Learning Programme Units that sustained the metaphorical narrative of the *Hadedda Island Big Book* and, where fantasy was used in particular activities, this was unrelated to preceding or subsequent activities focused on bird studies, habitat studies or environmental issues.

It became apparent during these experiences and observations that strategies will need to be sought in order to support teachers better in understanding and mediating this vital element of the *Hadedda Island Big Book*.

6.4.3 Multiple texts, multiple narratives

This section briefly considers how the *Hadedda Island Big Book's* multi-textual narrative simultaneously adds rich educational opportunities and complexity for teachers and learners. The discussion makes reference to the written text, the illustrated text and then the embedded curriculum narratives and social narratives that shape processes of meaning-making around the *Hadedda Island Big Book*.

The illustrated pages of the *Hadedda Island Big Book* that were drafted during Phase Two of the ongoing development process (see Appendix A) were enjoyed by teachers and learners alike. From an ornithological perspective, the birds were drawn in a slightly animated style but with care taken to make each bird recognisable as a distinct species. This supported the study of birds and, more particularly, studies of how different species are adapted to their habitats. During classroom observations at Epworth School, learners were noted to begin recognising bird species and pointing out characterising features to one another (RJA; Figure 4.4).

The visual text was created to support and enrich the written text (Olvitt, 2003). Although complementary of the written text, the visual text should not, however, be seen as limited to ‘illustrating the story’. Embedded in each illustration is a second narrative about birds, how they are perceived, what features are worth emphasising, and how their behaviour might be reminiscent of people’s behaviour. Figure 6.1 below shows the artwork that accompanies the written text:

So they all went home to make their selection
And cast their vote in the Great Bird Election. (See Appendix A.)

Here, the written text presents the simple storyline that the birds all returned to their habitats to vote, whereas the visual text represents the multiple aspects of the voting process and uses birds to portray conventional ways of behaving in these situations.

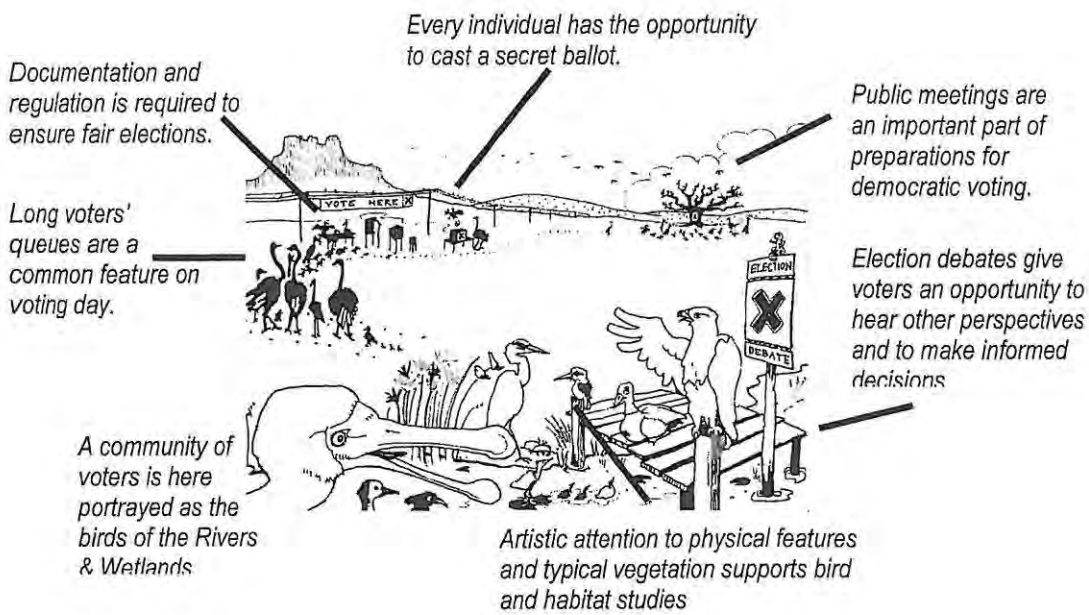


Figure 6.1 Artwork of page 5 of *The Hadedada Island Big Book* represents several aspects of a typical democratic election process. The sub-narratives of these scenes complement and enrich the brief written text.

The written text introduces the basic storyline but also reveals *Hadedada Island's* socio-political orientation. To demonstrate this, Figure 6.2 shows a simple analysis of written text on the first page of *Hadedada Island Big Book*.



Figure 6.2 The written text of Page 1 of *The Hadedada Island Big Book*, showing how the choice and arrangement of words can direct the reader's meaning-making of the book's overall narrative.

Experiences in three participating schools suggest that the written text is challenging yet accessible for learners. The rhyming text appeared to be enjoyed by all and supported reading aloud from the book. It was especially helpful in the English second language context of Nogqaza Primary School where learners' pronunciation was guided by the preceding rhyme.

To open up discussion around leadership qualities and ways of communicating with others, the written text on page 3 was edited at an early stage of Phase Two so that the Hadedea ibis "asks the others" rather than tells them to listen to her ideas. She commences her speech with the words: "Please listen!", suggesting that she is appealing to the other birds rather than being authoritarian or demanding. The rhyming couplets on the sequence of seven pages introducing the elected representatives of the various habitats were appreciated by learners, but more so by adults who picked up on the subtle word play in some verses. For learners, these couplets drew attention to key ideas associated with birds, habitats, elections or environmental issues.

For teachers with confidence and experience in interpreting written and visual texts, the meanings embedded in the pages of *Hadedea Island Big Book* are accessible, and they readily support the generation of curriculum activities. The teachers at Epworth School, despite voicing uncertainties about how they 'should be' using the *Hadedea Island Big Book* (see Section 4.4.1) were able to generate a wide range of lessons, activities and worksheets, and make links to how these could support various learning areas and an outcomes-based approach to teaching (see Section 4.4.3).

The teachers at Howick Preparatory School also easily recognised the narratives of *Hadedea Island Big Book* and the material's intention to support a particular type of teaching and learning, but time constraints and a comparatively rigid approach to lesson planning limited the mobilisation of these ideas (see Section 5.4).

In interactions with Nogqaza Primary School, especially in the early planning stages, the teachers requested assistance with interpreting the text in a way that would support curriculum activities. Teachers speaking English as an additional language seemed to struggle more with assimilating the story and proceeding with lesson planning (RJB and TI-NP). New vocabulary had to be mastered before the basic storyline could be more fully appreciated, and only then could a more allegorical reading of the book be undertaken.

Experience in applying visual literacy skills to a text such as *Hadedea Island Big Book* also appeared to influence the use of the materials. Although all teachers appreciated and enjoyed the book's artwork, all benefited from having access to guiding teacher notes (see Appendix W) or from having details of the illustrations personally pointed out to them. An emerging challenge, then, is in supporting teachers to identify and understand the multilayered text of the *Hadedea Island Big Book* and to be able to translate these understandings into curriculum activities.

6.5 Open-ended Opportunities

In this case study, it has become evident that the *Hadedea Island Big Book* holds much potential as a teaching resource to support a broad range of environmental learning processes at the Intermediate Level. Multiple, potential learning processes are embedded in the pages of the book, in both the illustrated and the written texts. These open-ended opportunities cannot be pre-determined but their potential is inscribed in the material's content and design as described in Section 6.4.

During its development and trialling phases, the *Hadedea Island Big Book* was the starting point for studies on bird anatomy and behaviour, democratic processes, election processes, leadership styles and environmental problem-solving. These diverse foci were approached through artwork, design work, role-playing, group and individual investigations, creative writing and speech-making (see Appendix Y). These experiences did not always result in deepened understandings of socio-ecological issues; sometimes they existed as isolated activities for creativity's sake, or for the development of other skills such as vocabulary development or writing skills.

This chapter has discussed the wide-ranging and creative responses to the *Hadedea Island Big Book* that emerged from diverse contexts of its use. In the following chapter, I draw on these reflections to make conclusions in the light of the study's research focus on the adaptive development of learning support materials in relation to the RNCS 1st Principle. I also make some recommendations for the further development of the *Hadedea Island Big Book* which may also be useful in guiding future materials development initiatives with a similar focus.



Chapter Seven

Fledgling Flight: Conclusion and Recommendations



*... so we might work towards constructing a reality
that matches the vision...*

Gough (2002:5)

7.1 EMERGING CLARITY

The design and experience of this interpretive case study arose from the research question:

How might the guiding orientation of the RNCS 1st Principle be realised in(to) practice through the development and use of learning support materials?

In response to this question, I commenced, through Share-Net, the adaptive development of the *Hadedda Island Big Book*. I collaborated with Epworth School in the early design of the materials and explored with the two participating teachers some of the *Hadedda Island Big Book's* potentials for teaching and learning. Building on these insights and experiences, a draft version of the materials was presented to Howick Preparatory School and Nogqaza Primary School and I worked with them observing and recording situations of its use.

The perspective from which I interpreted these experiences considered the RNCS 1st Principle as the guiding statement which, if implemented, would ensure the integration of environment in the new curriculum. During the study, however, it became clear that the 1st Principle had *already* been designed into the curriculum in Learning Outcomes and Assessment Standards for all Learning Areas. Current emphasis and activities, then, which attempt to integrate environment in all Learning Areas through professional development activities and the development of curriculum materials, are tautological. It became clear to me that a more appropriate approach would be to work with existing Learning Outcomes and Assessment Standards to operationalise and make the spirit and intention of the RNCS 1st Principle *explicit* in Learning Programme Units.

In this shift of focus for clarifying the RNCS 1st Principle's nature and role within wider curriculum processes, I came to visualise the *Hadedda Island Big Book* as a learning support material for enabling generative curriculum activity around learning outcomes and associated assessment standards. Thus, instead of seeing the material as a 'tool' to support teachers to 'bring environment into the curriculum', I began to see it as capital for generating curriculum activities out of which environmental learning may (or may not) arise.

It is important to emphasise that it is not 'environmental education' activity (as a separate dimension of education) that is generated here. Instead, it is the generation of curriculum activity *towards environmentally orientated Learning Outcomes* that is of interest and value.

7.2 GENERATIVE ORIENTATIONS TO CURRICULUM

The experience of working with the draft *Hadedda Island Big Book* in three schools has stimulated change, even if only in a small way. For many of the participating teachers, involvement in the study has enriched their teaching practice by opening up new understandings, offering practical materials

to support their teaching, showing new skills and stimulating confidence. For many learners, learning about birds, habitats and / or democratic processes occurred through creative experiences which they might not otherwise have had. As researcher, I have gained valuable insights into curriculum processes, the complexity of the South African educational arena, and the powerful creative opportunities that are to be found in learning support materials. Many of these insights flow directly into Share-Net, the context of the materials development process, and are intended to steer future materials development initiatives.

This study has shown that numerous generative opportunities are embedded in the content and design of the *Hadedea Island Big Book*. In avoiding a prescriptive approach to designing, introducing and mediating the materials with the participating teachers, the study enabled each school to interpret and use the materials within its unique context, resources and priorities. The teachers at Epworth School, working in an extraordinarily well-resourced and highly skilled teaching and learning environment, were able to direct learning around bird and habitat studies, human rights, justice, democracy and election processes, and then create a synergy between these dimensions to deepen learners' understandings of socio-ecological issues.

The teachers of Howick Preparatory School, also working in a well-resourced environment, but with larger classes and in a more regulated / regulating school system, created some opportunities to explore the multiple dimensions of environmental issues. For example, they completed a series of introductory habitat studies and a focus on election processes which learners appeared to find interesting.

The teachers at Nogqaza Primary School effectively used the *Hadedea Island Big Book* to support their priority of developing their learners' English vocabulary and general reading skills. This skills emphasis was situated within a more general focus on bird and habitat studies and human rights issues.

It becomes evident, then, that the *Hadedea Island Big Book* has allowed for the generation of diverse teaching and learning opportunities beyond those envisioned during the early stages of its adaptive development. However, not all arising curriculum activities have supported the type of socio-ecological learning promoted through the 1st Principle of the RNCS. As described below in Section 7.3, this study recommends that future generative processes associated with the *Hadedea Island Big Book* (or other materials yet to be developed) are firmly situated in the environmentally-oriented Learning Outcomes and Assessment Standards of all Learning Areas. This may serve to strengthen the implementation of the Revised National Curriculum and mobilise the RNCS 1st Principle into practice whilst advancing the generative potential of teachers' engagement with the materials.

7.3 A REFLEXIVE REVIEW OF THE STUDY

Chapter One draws attention to this study's location on the threshold of a new trajectory in South African school-based curriculum work, when little headway had yet been made into the interface of the RNCS, the role of learning support materials and the arena of environmental education. Many pertinent questions were being raised by myself and colleagues, and in most cases the routes to exploring such questions were inextricably bound up in one another. This made the formulation of a 'self-contained' research question on any of the concerns difficult. Hence, the final research question that guided the writing up of this study ['How might the guiding orientation of the RNCS 1st Principle be realised in(to) practice through the development of materials and their support into use?'] underwent several subtle refinements as its various dimensions came to be clarified.

The study thus developed with an intermeshed focus of many parts. This multiple focus has emerged as both a strength and a weakness of the study. Whilst such an approach has enabled the study to be situated in a broader, richer landscape (and hence to resonate with the social epistemological view adopted in the study), it has created challenges in reflecting and containing the emerging perspectives within a report of this nature.

The emergent information – presented in Chapters Four and Five – confirmed general trends in South African classroom practice, in the use of learning support materials, and the challenges of pursuing environmental teaching and learning (as introduced in Chapter Two). Then, in the later stages of the study, an unexpected realisation of the potential to work generatively with(in) curriculum frameworks became apparent.

The notion was regarded as a significant response to the study's commitment to exploring ways in which learning support materials might help to mobilise the intentions of the RNCS 1st Principle. Hence, the potential of generative curriculum approaches is foregrounded as a key finding of the study *as a response to*, rather than *an extraction of*, the wide-ranging information presented in Chapters Four and Five.

Chapter Six endeavours to reflect the key dimensions of the study's school-based work using the *Hadedda Island* materials. It presents findings in relation to the study's contextual landscape, curriculum interface, and experiences of developing learning support materials and supporting them into use. Findings from these dimensions were the catalyst from which awareness of the potential of generative approaches to curriculum arose. The chapter has not, however, been able to probe this notion of generative curriculum in much depth; this is due partly to the

limitations of a study of this scope and nature, and because any meaningful engagement with it would require the formulation of a new research question, and hence a subsequent, separate study. Therefore, rather than coming to conclusive findings, Chapter Six reflects on the multi-faceted landscape and points to generative approaches to curriculum as a possible way forward in future materials development work.

The question, then, is has the study been able to probe the research question and respond to its stated goals? The question is answered, ultimately, by the call to explore the potential of generative approaches to curriculum work when developing and using learning support materials. This rests on the study's recognition that a departure from conventional ways of engaging curriculum is required if the guiding orientation of the RNCS 1st Principle is to be given life within the daily practices of South African classrooms.

The first goal of the study was to investigate the interface of learning support materials, the RNCS 1st Principle and the Learning Outcomes of selected Learning Areas. This has been achieved through documenting the case of the *Hadedea Island* materials' use in three school contexts as teachers and learners worked on the Learning Areas of Natural Sciences, Social Sciences, Life Orientation, Languages and Arts and Culture.

The second goal, to investigate strategies to support the successful use of Learning Programme Units in Grade 4 classes, using the *Hadedea Island* materials, has been described in detail in Chapters Four and Five as different teaching and learning contexts gave rise to different teaching and learning strategies. Resonating with the study's research question, this focus enabled the potential for generative curriculum work to be considered as a future strategy when developing teaching and learning materials and supporting them into use.

7.3 RECOMMENDATIONS

In this section, I make recommendations to guide the further development of the *Hadedea Island Big Book*, but understand that many of these recommendations may also be of relevance to future materials development initiatives in the arena of environmental education.

An emphasis on Learning Outcomes and Assessment Standards Exploration of environmental detail and complexity through the use of the *Hadedea Island Big Book* was limited. Teachers developed numerous classroom activities related to the book but were less successful in arranging these into a cohesive Learning Programme Unit to deepen learners' understanding of the interacting dimensions of environmental issues. It appears that teachers' limited engagement with the details of

curriculum policy, notably the Learning Outcomes and Assessment Standards of each Learning Area, is a main contributing factor to an under-developed focus on environment as phase organiser. This study thus recommends that future materials development initiatives (towards implementation of the RNCS) prioritise engagement with the environmentally-oriented Learning Outcomes and Assessment Standards of all Learning Areas. In doing so, it is likely that creative, learner-centred activities, which develop critical thinking skills and prepare learners to contribute to an equitable and sustainable future in South Africa could arise from learning materials that directly support the environmental focus integral to each Learning Area.

Consideration of context Across the experiences of all the schools participating in this case study, the dominance of each school's unique socio-historical, economic, political and pedagogical context in shaping the use of the *Hadedea Island Big Book* has been observed. Consequently, features of the learning support material that stimulate creative and productive learning experiences in one school might be differently interpreted or disregarded in another school context. It would appear, then, that there can be no formulaic recommendation for the design of learning support materials for use across the broad range of schools in South Africa; that 'one size does not fit all'. In the case of the *Hadedea Island Big Book*, the material was sufficiently open-ended to allow the creative space for each teacher to take up the material according to his / her teaching context. In refining the book into a more supportive curriculum pack, this study thus recommends that the pack retains the *Hadedea Island Big Book* in its present form that allows for multiple curriculum responses, but that it includes supplementary materials that offer support across the range of school contexts.

Explore generative approaches to curriculum work Historically, South African teachers have not been encouraged or empowered to allow their teaching practices to arise from their social context due to the national curriculum policy that was in place to specify curriculum practice. As teachers now shift to working within the transformed education system and, more particularly, the RNCS, support needs to be given to teachers to work with confidence and creativity in responding to the policy as a 'guiding framework' rather than as a static imperative. Learning support materials designed with this in mind might stimulate teachers to develop contextually relevant teaching and learning activities that *articulate with* curriculum expectations, rather than impose curriculum imperatives on their visioning of the materials' potential use. This study thus recommends that the notion of generative approaches to curriculum (and its implications for the development of learning support materials and their support into use) be borne in mind as the *Hadedea Island* materials are refined and made available to teachers.

Prioritise the supportive role of learning support materials Learning support materials should not only generate curriculum work; they should, as the term suggests, be materials that *support* learning processes. This intention should be foregrounded around particular Learning

Outcomes when developing learning support materials so that their pedagogical purposes are prioritised and are embedded within the Revised National Curriculum.

Through its multiple opportunities and multiple interpretations, the case of the adaptive development of the *Hadedda Island Big Book* exemplified the need for supplementary, supportive materials to accompany the core text, namely, the book. The teachers participating in this study requested clearer guidelines to help orientate them to the concept of *Hadedda Island*, as well as materials to support particular foci or activities. This could be in the form of fact sheets on the various habitats, or notes on constitutional rights and election procedures. The teachers also expressed an interest in receiving ready-to-use worksheets and lesson plans. A tension then exists in providing sufficient supplementary material to enhance the use of the *Hadedda Island Big Book* without providing so much that the teachers *adopt the pack* as a 'ready-to-use' set of worksheets rather than *adapt the framework* as a starting point for their own contextually located generative processes of teaching and learning. This study therefore recommends that the *Hadedda Island Big Book* be further developed as a 'curriculum support pack', with the book as the core text, supported by a brief, carefully framed orientation for teachers, two exemplars of learning programme units, brief fact sheets with core background information on habitats, bird characteristics and democratic processes, and a small set of practical 'extras' such as bird mask templates and a ballot sheet.

Seeking balance and interaction between ecological and social dimensions of the material

The various curriculum activities arising from use of the *Hadedda Island Big Book* emphasise both ecological and social dimensions of environment. The tendency exists, however, to focus on these dimensions separately, such as through a study of birds in their habitats, followed by a study of constitutional rights and election processes. A tension within the developing *Hadedda Island Big Book*, then, is to make the potential for integrating the social and ecological dimensions of the material more explicit and accessible for teachers. This study recommends using the proposed *Hadedda Island* curriculum support pack to respond to this challenge.

Professional development opportunities In recognising that many teachers need to develop the skills necessary to teach according to the structure and vision of the new curriculum and, more especially, to integrate environment in their teaching in line with Learning Area requirements, the need for professional development processes becomes evident. The *Hadedda Island Big Book* has the potential to contribute to such processes through its generative potential and its strong articulation with the RNCS 1st Principle. This study therefore recommends that the *Hadedda Island Big Book* (or the emerging curriculum pack) be used within resource-based, practice-centred professional development activities. Through such processes, teachers should benefit from mediated experiences of:

- interpreting and adapting a set of learning support materials for their own teaching context by starting with appropriate Learning Area Outcomes, and then integrating these with other existing learning support materials such as text books;
- planning an environmentally-oriented learning programme unit and implementing it within time and other contextual constraints;
- assessing learners' progress in relation to Learning Area Outcomes and Assessment Standards;
- mobilising curriculum policy into practice, most particularly through working with the environmentally-oriented Learning Outcomes and Assessment Standards of Learning Areas;

7.4 OPPORTUNITIES FOR FURTHER RESEARCH

Interacting with the three schools participating in this study proved to be a stimulating and rewarding experience that brought many new understandings to my perspectives on education and research. The study was designed to generate a range of information, from learners' work and teaching plans to teacher interviews and classroom observations, and this resulted in a productive landscape in which to consider my research question within the collaborative development and use of the *Hadededa Island* materials. Through this, it also became apparent that there are many demanding dimensions to educational research that could not be explored in any depth due to the scope of this study, and that the study could be conducted several times in the same schools and be considered from a different perspective each time.

The study has thus revealed opportunities for further research into the multi-dimensional field of curriculum transformation. Below, I set out some of the key areas that emerged during this case study as requiring more probing investigation:

- The *Hadededa Island Big Book* is a highly metaphorical text – a characteristic which gave rise to some tensions in the study. Although the area of metaphor is well-researched, less is known about its usefulness in South African school settings and in learning support materials in particular. Pursuing a question of the potential role of plant and animal metaphor in environmental education processes may give rise to exciting new opportunities in materials development.
- Closely related to the issue of metaphor is the *Hadededa Island Big Book's* essentially anthropomorphic nature. Whilst efforts were made to avoid sentimentalising or misrepresenting the bird 'characters', the tension remained of how these representations shape readers' impressions of birds and ecological issues. Further studies around the *Hadededa Island Big Book*, or around other learning support materials that rely on anthropomorphism, may produce useful insights into this as a conceptual and stylistic device.

- Much potential exists in exploring the links that the *Hadedda Island Big Book* might make to indigenous knowledge systems. Interactions with teachers and learners during this study raised several questions around traditional stories, myths and associations related to birds. The incorporation of such explorations into the development of a *Hadedda Island* curriculum pack holds exciting prospects for the strengthening of indigenous knowledge systems in curriculum work.
- The issue of language in shaping the use (and usefulness) of learning support materials requires ongoing research. This study did not focus on language issues although they were an ever-present backdrop to the school-based observations.
- This study has touched on the significance of school management issues, school ethos and historical context in shaping access to and use of learning support materials. Further studies that focus on these dimensions, with a special focus on their influence on environmental learning processes in schools, may offer insights to guide future materials development initiatives and school-based interventions.
- Issues of teacher knowledge and skills, and how the development of these might be supported through the use of learning support materials is an area in need of more detailed study. This is closely related to the issue of professional development, its role in strengthening environmental education processes in schools and, conversely, the role of environmental education processes in contributing to a strengthening of professional development processes in South Africa.
- This study points to generative approaches to curriculum as a possibly significant re-orientation to materials development in a South African context. This is only 'opened up' towards the end of the study and it is now necessary to pursue future research projects that can probe this orientation further through appropriately designed studies.

7.5 TOWARDS GENERATIVE CONCLUSIONS

In concluding this chapter, I draw on two quotations to frame my discussion. The first of these is from Gough (2002:17) who presents a vision of far-sighted curriculum work giving rise to creative possibilities in the present:

Recognizing that futures are intrinsic to present action and existence liberates the critical and creative imagination and enables us to explore possible futures without colonizing them.

At the current juncture of South African curriculum development, it is necessary to have a vision of how teaching and learning might be, and what it might achieve. The new curriculum – at policy level at least – articulates this vision and attempts to guide teachers and other curriculum workers in their present work to construct realities that 'match the vision' (Gough, 2002).

Recognising the uncertainties and opportunities associated with constructing realities to match the vision, this study has explored the prospect of a generative orientation to curriculum work, supported by learning materials designed to stimulate generative processes. Within a focus on the environment / curriculum interface, the study reports how the *Hadeda Island Big Book* has given rise to curriculum activities towards the realisation of the vision contained in the RNCS 1st Principle and the deepening of socio-ecological understandings.

The experiences of the case study draw attention to some of the challenges of making this vision realisable within the realities of everyday teaching practice. Limited access to resources, the legacy of a deeply flawed education system, teachers' uncertainties regarding curriculum changes and their unfamiliarity with a multi-dimensional approach to environment in the curriculum have been outlined in this study as some of the main challenges facing curriculum transformation.

In line with this, Gough (*ibid.*) alludes to the need for critical engagement with curriculum processes and the creativity to respond appropriately. Hart (2002), in the second quotation to frame this discussion, offers further direction by suggesting that *liberating* experiences of curriculum should be created for teachers and learners alike:

Education is meant to change people, as is research; not through colonizing their consciousness but by bringing them to a place where they can go on to make up their own stories.

In agreement with Hart's proposition and based on the experiences of the case study of the *Hadeda Island Big Book*, this study concludes that much potential lies in the role of learning support materials in supporting and stimulating teachers to develop curriculum activities *out of* the established Learning Area Outcomes and Assessment Standards. In so doing, teachers should not be bound by a 'top down' perception of curriculum that requires classroom activities to match and fulfil its requirements, but rather they should be liberated by the prospects of classroom activities that can arise *out of the starting points* within Learning Outcome statements and associated Assessment Standards.

In the light of the study's research question, the *Hadeda Island* case study has created insights into how teachers' planning in response to the *Hadeda Island Big Book* can contribute to deepening understandings of socio-ecological tensions, challenges and opportunities, as promoted in the RNCS 1st Principle. However, the ways in which the material is taken up, and its embedded opportunities realised, are determined predominantly by the historical, social and economic contexts of each learning experience. It is when these multiple teaching and learning opportunities are explored *in relation to* environmentally-oriented Learning Area Outcomes and Assessment Standards that generative processes of environmental learning can begin to unfold.



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PERSONAL COMMUNICATIONS

Gough, N. (2003, August 29). Associate Professor and Director of the Deakin Centre for Education and Change at Deakin University, Victoria, Australia.

Lotz-Sisitka, H. (2003, November 10). Associate Professor and Director of the Murray and Roberts Chair of Environmental Education, in the Environmental Education Unit at Rhodes University, Grahamstown.

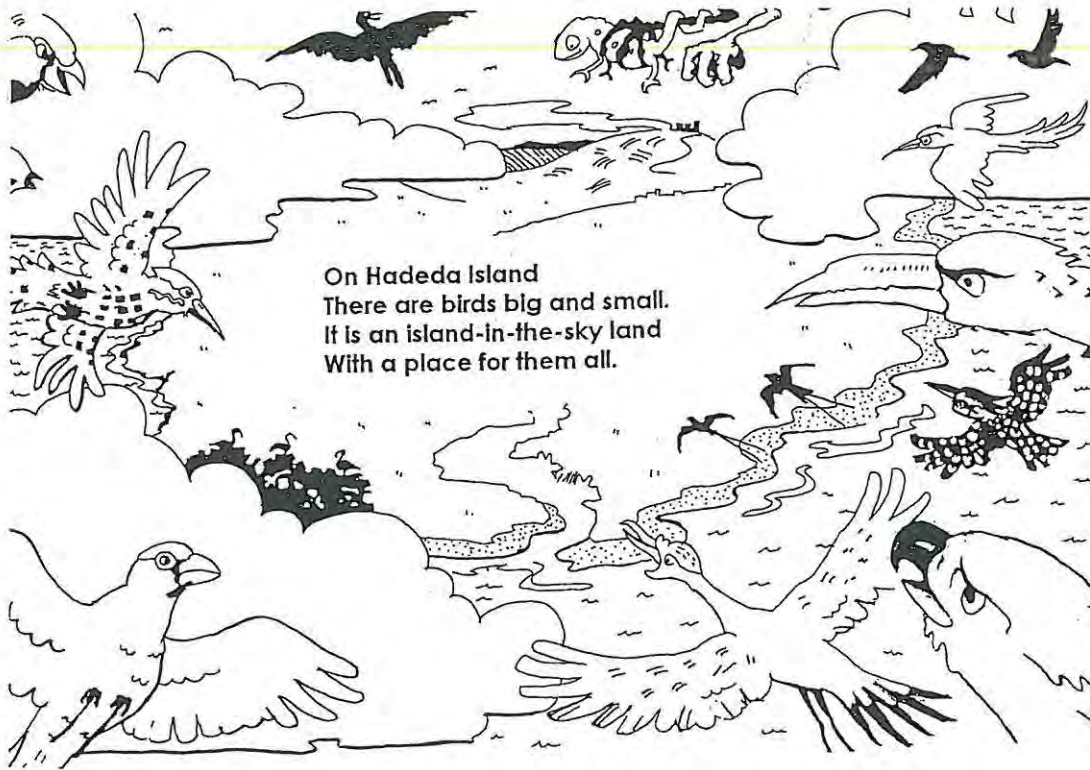
O'Donoghue, R. (2002, November 2). Associate Professor and Director of the Gold Fields Chair of Environmental Education, in the Environmental Education Unit at Rhodes University, Grahamstown.

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APPENDIX A: DRAFT VERSION OF THE HADEDA ISLAND BIG BOOK
(SCALED-DOWN FROM A3 TO A4) AS USED IN PHASE
THREE OF THIS STUDY.

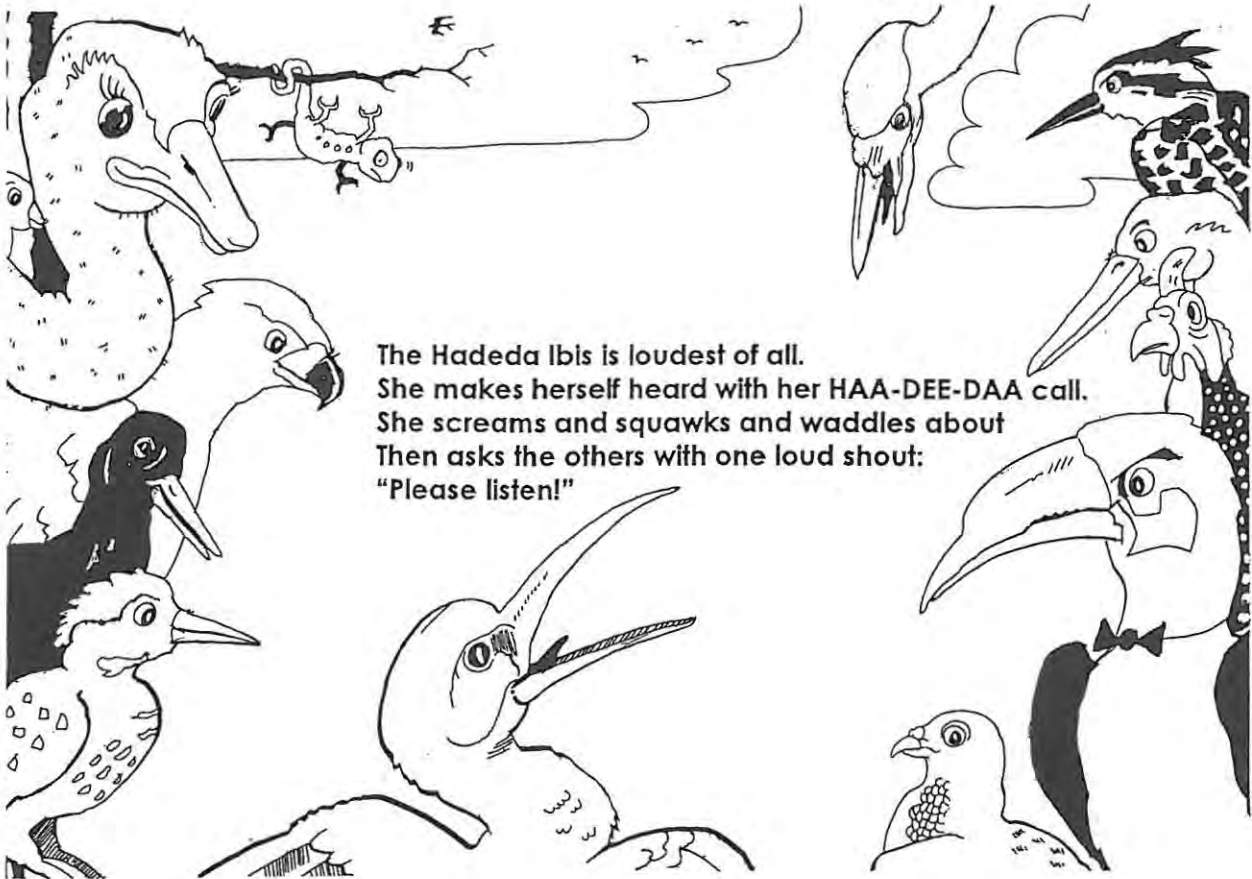
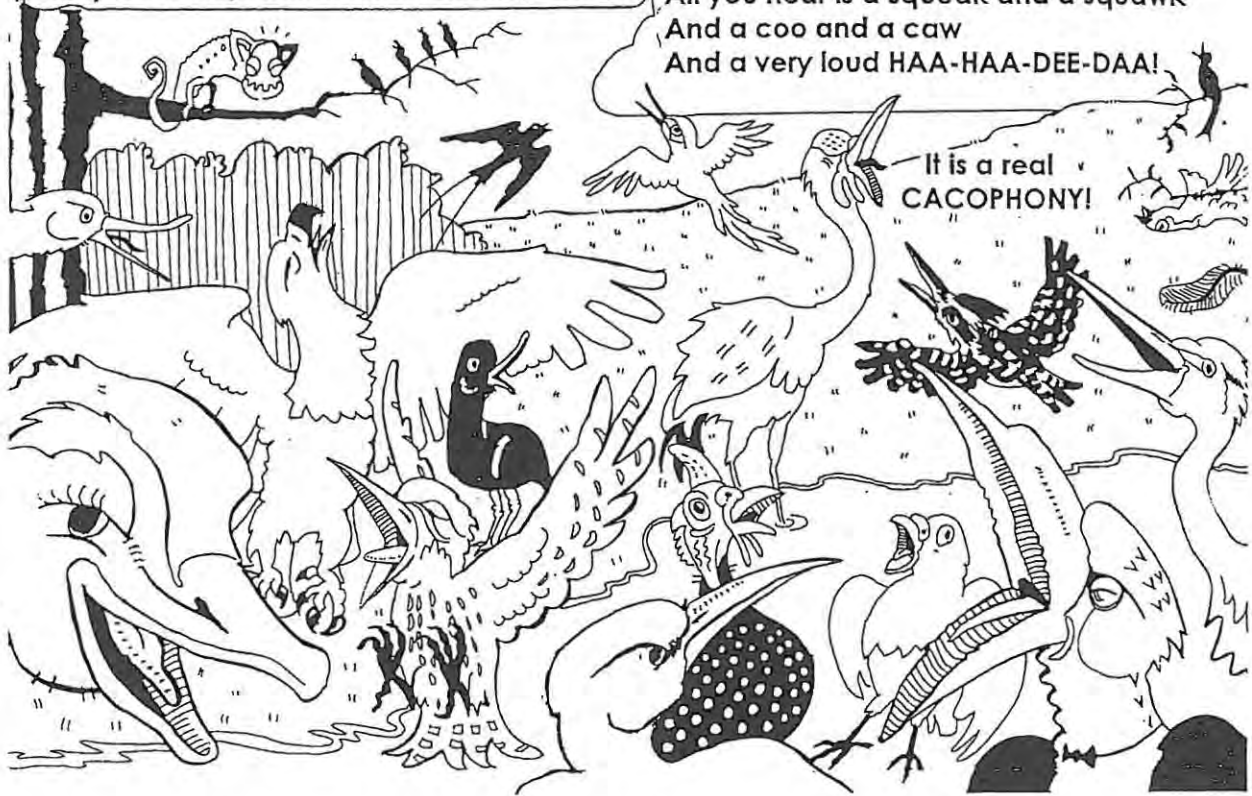


On Hadeda Island
There are birds big and small.
It is an island-in-the-sky land
With a place for them all.

On Hadedā Island all birds have the right
To say what they want without starting a fight.

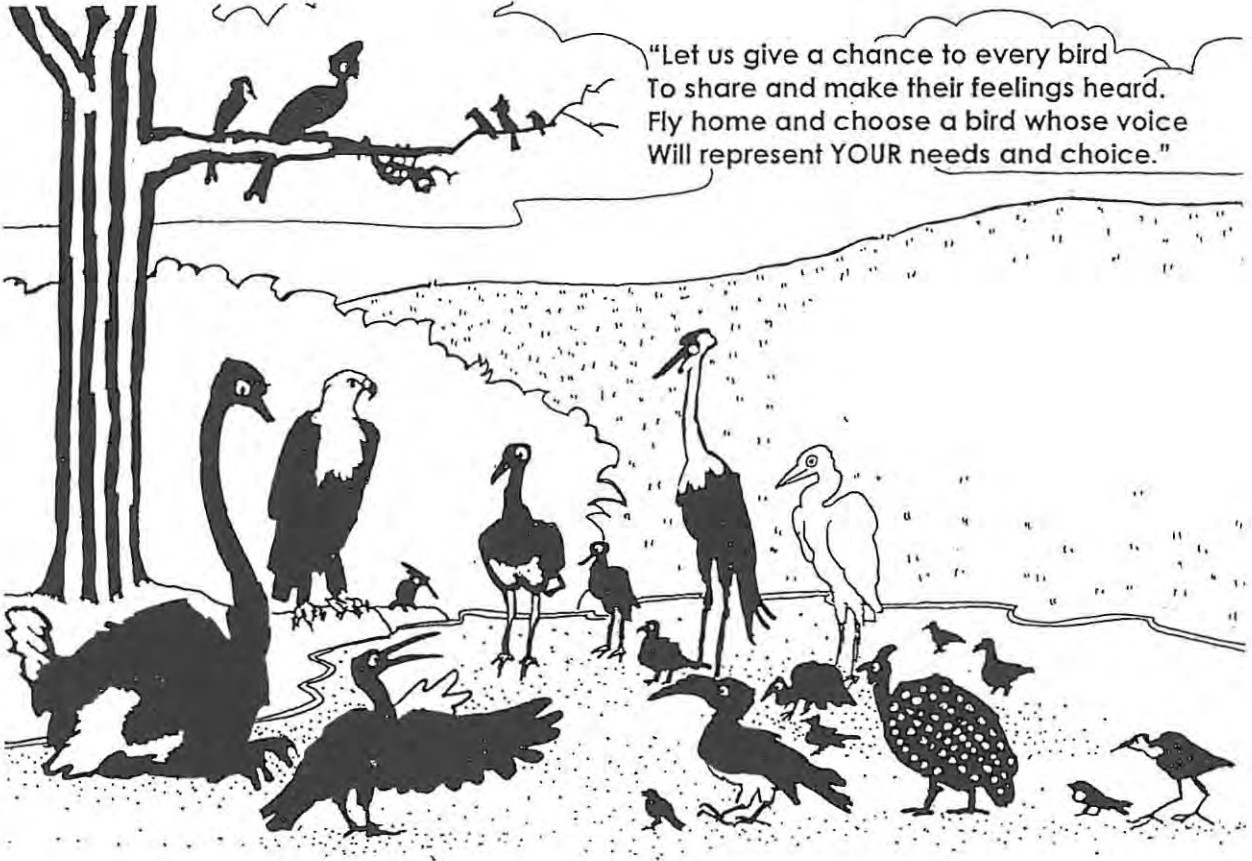
But, when every bird sings out at once,
All you hear is a squeak and a squawk
And a coo and a caw
And a very loud HAA-HAA-DEE-DAA!

It is a real
CACOPHONY!

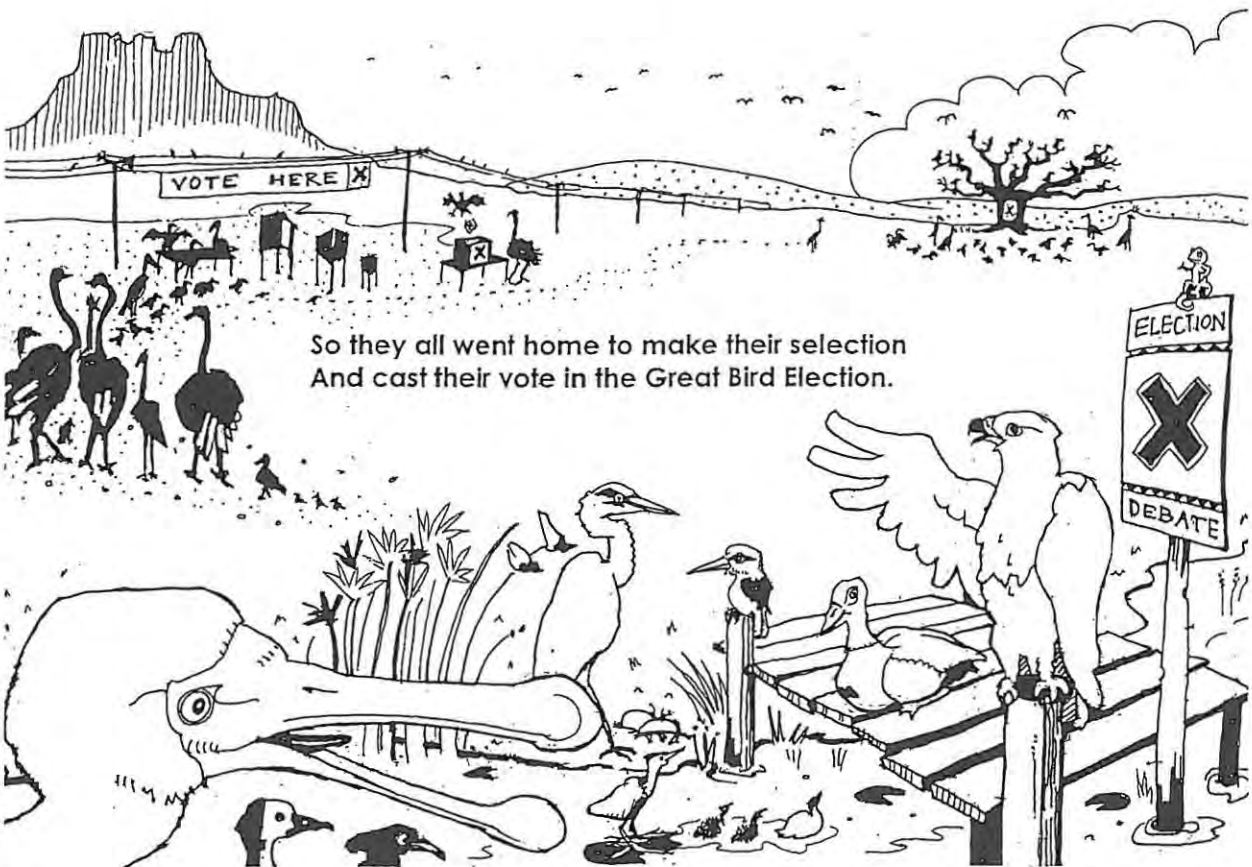


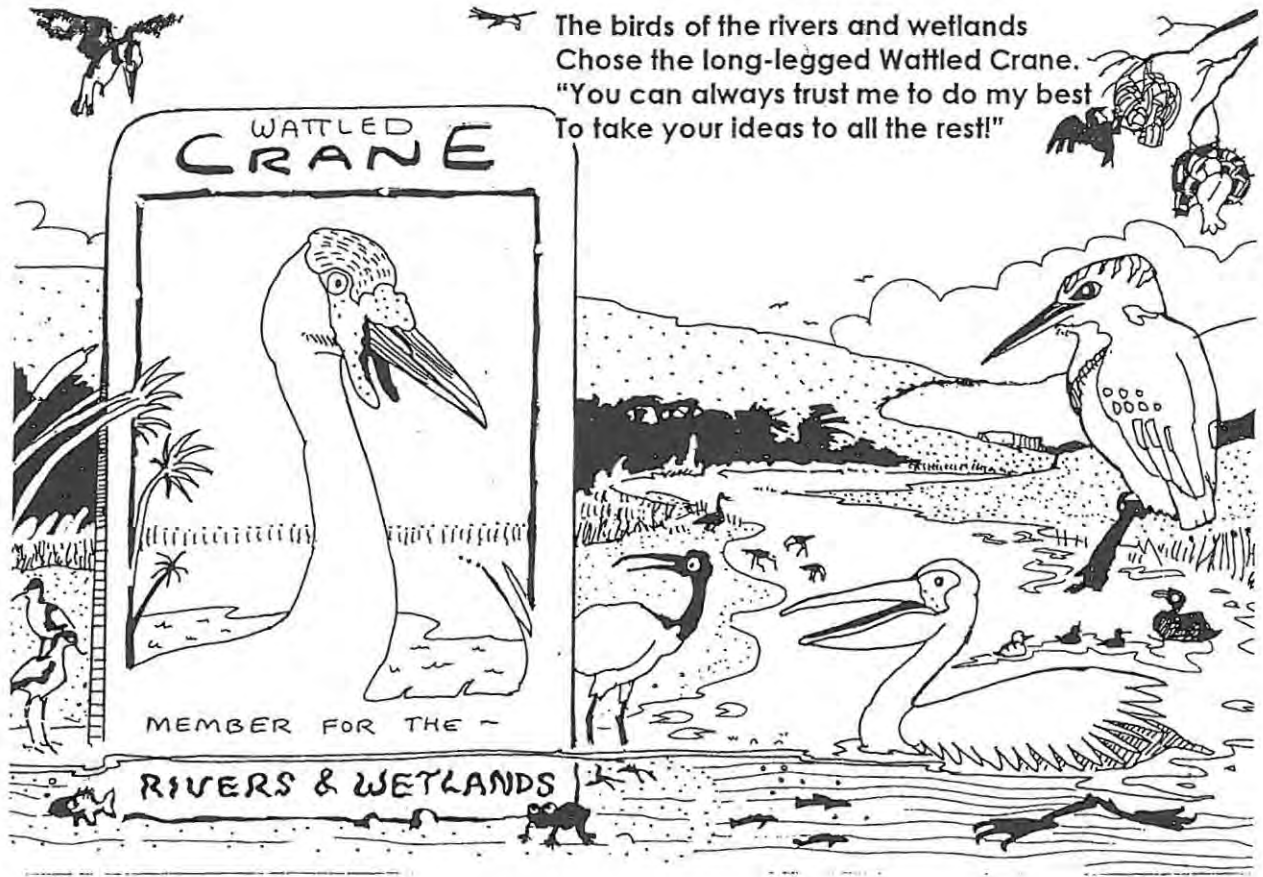
The Hadedā Ibis is loudest of all.
She makes herself heard with her HAA-DEE-DAA call.
She screams and squawks and waddles about
Then asks the others with one loud shout:
"Please listen!"

"Let us give a chance to every bird
To share and make their feelings heard.
Fly home and choose a bird whose voice
Will represent YOUR needs and choice."

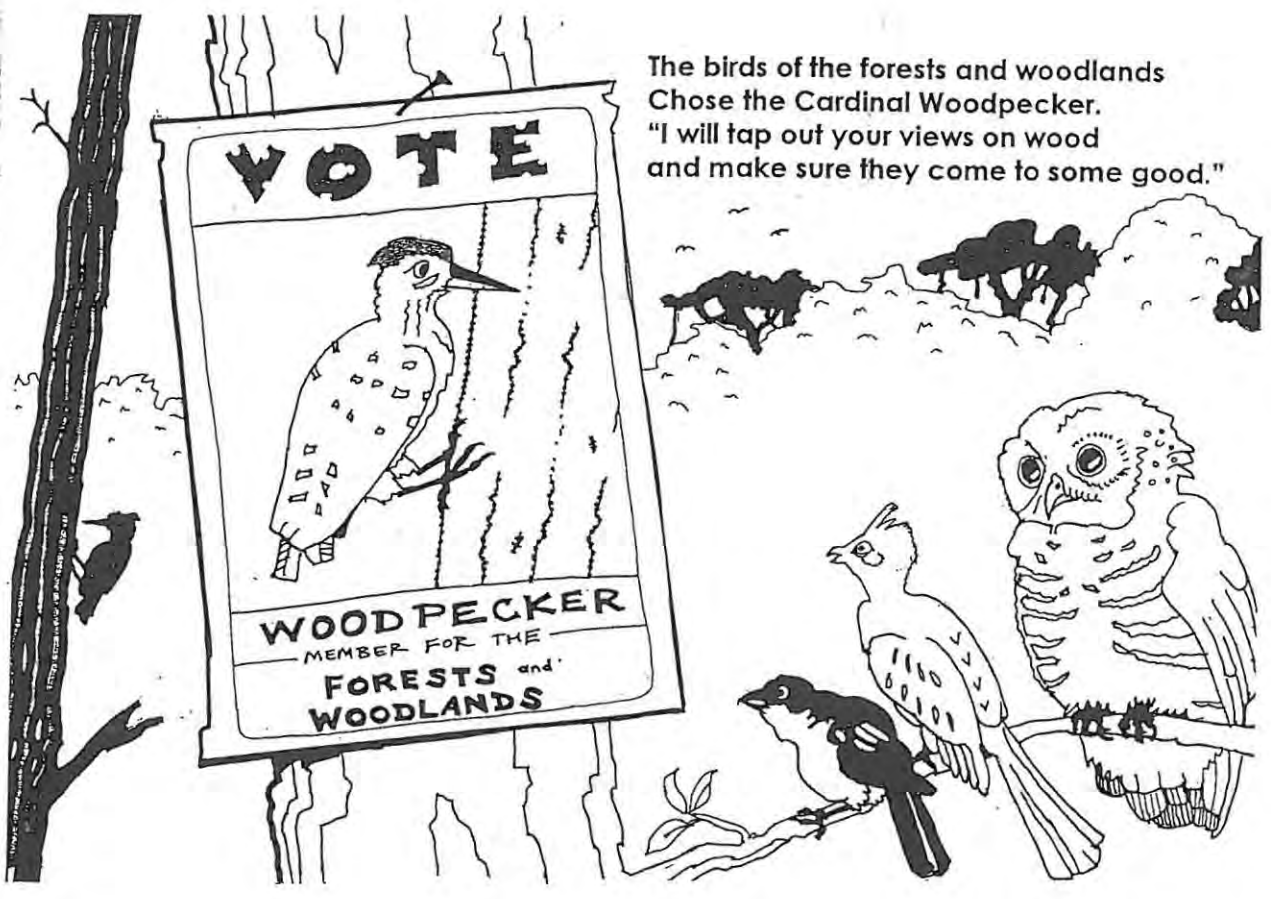


So they all went home to make their selection
And cast their vote in the Great Bird Election.





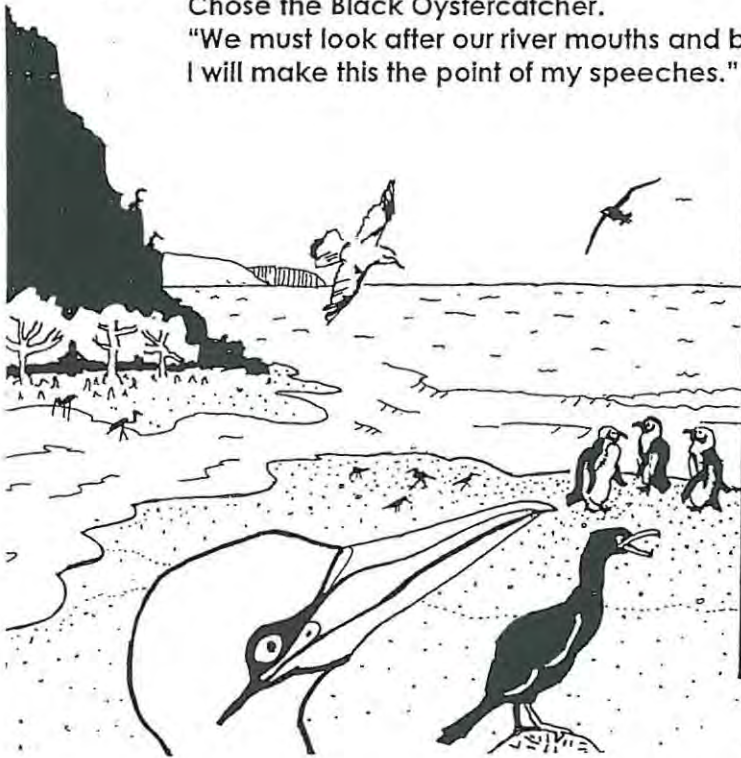
The birds of the rivers and wetlands
 Chose the long-legged Wattled Crane.
 "You can always trust me to do my best
 To take your ideas to all the rest!"



The birds of the forests and woodlands
 Chose the Cardinal Woodpecker.
 "I will tap out your views on wood
 and make sure they come to some good."



The birds of the coasts and estuaries
 Chose the Black Oystercatcher.
 "We must look after our river mouths and beaches.
 I will make this the point of my speeches."



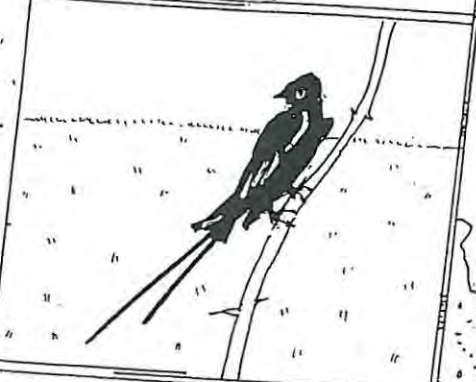
MEMBER FOR THE
 COASTS & ESTUARIES~



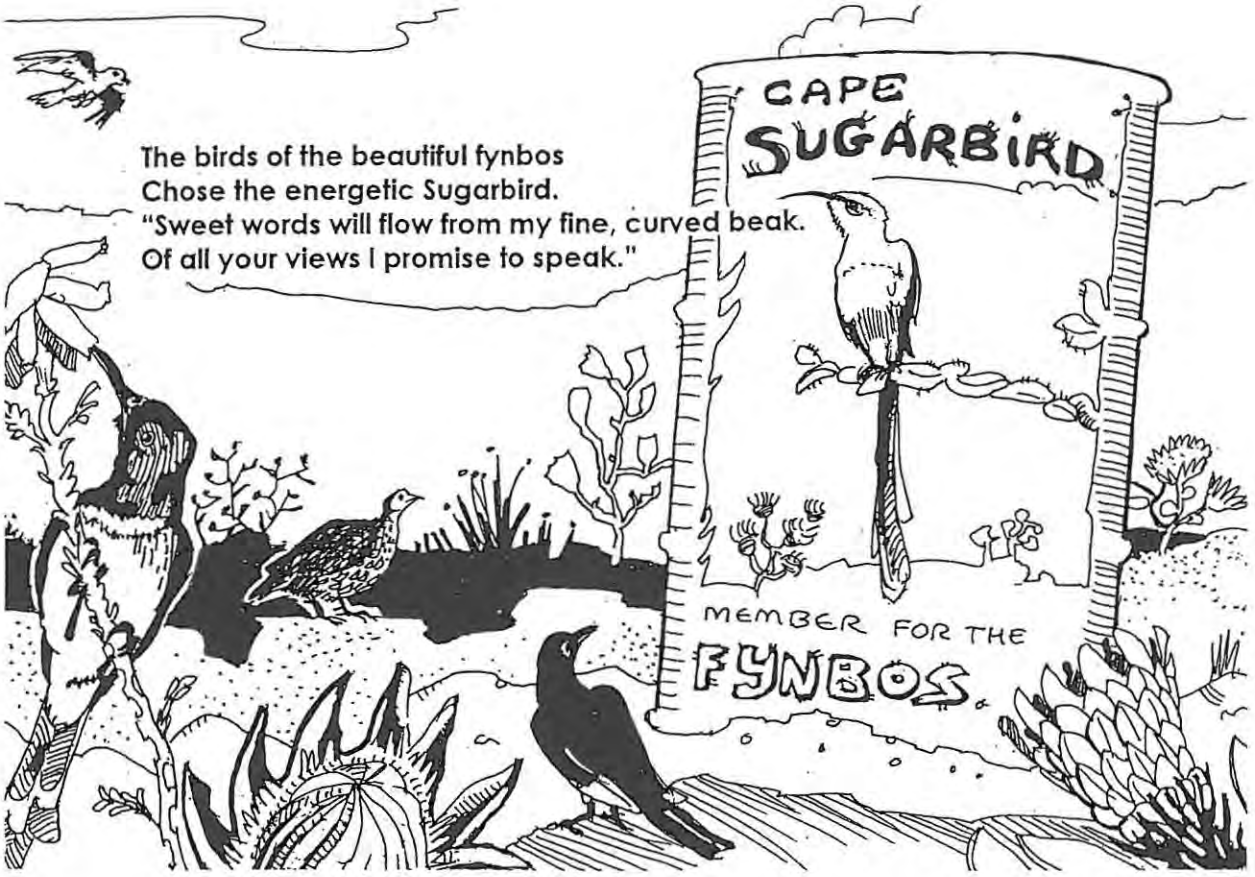
The birds of the wide, open grasslands
 Chose the precious Blue Swallow.
 "Though I am small, I am agile and fast.
 I will make sure our home will last!"



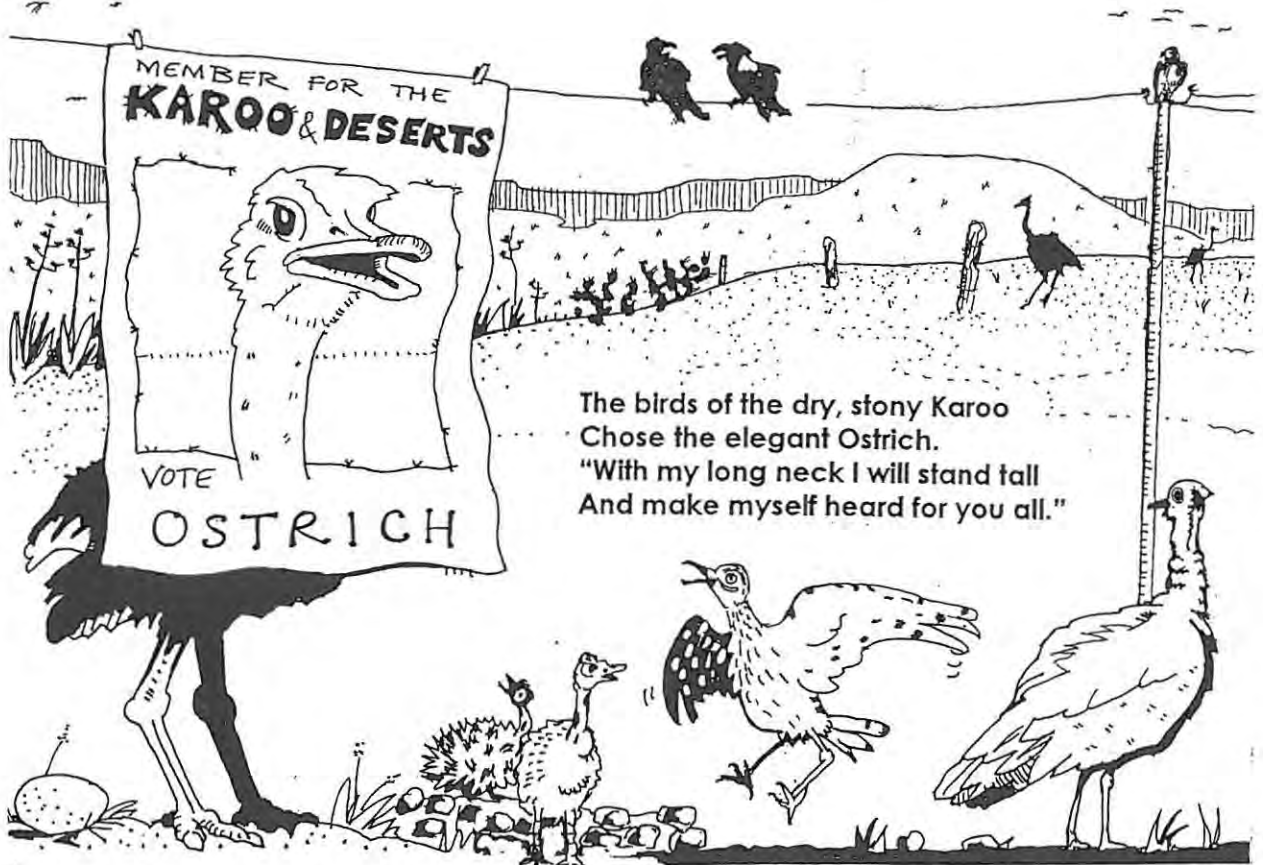
BLUE
 SWALLOW



MEMBER FOR THE
 GRASSLANDS



The birds of the beautiful fynbos
Chose the energetic Sugarbird.
"Sweet words will flow from my fine, curved beak.
Of all your views I promise to speak."



The birds of the dry, stony Karoo
Chose the elegant Ostrich.
"With my long neck I will stand tall
And make myself heard for you all."



The birds of the busy urban areas chose the grey, friendly Pigeon. "Be pleased that I have contacts in town. As your leader, I will not let you down!"



The elected members fly off to Parliament to make decisions on behalf of all the birds on Hadedad Island.

Can you imagine what wise choices they will make?



So now, on Hadedada Island
the Members have been chosen!
They must listen
and look
and take action
for the place where they live.



Care for the disabled



Childcare

Rights for All



APPENDIX B: SAMPLES OF DRAFT PAGES FROM THE AUSTRALIAN COCKATOO ISLAND BIG BOOK



describe the kind of citizen the education and training system should aim to create. The critical outcomes envisage learners who will be able to:

- Identify and solve problems and make decisions using critical and creative thinking.
- Work effectively with others as members of a team, group, organisation and community.
- Organise and manage themselves and their activities responsibly and effectively.
- Collect, analyse, organise and critically evaluate information.
- Communicate effectively using visual, symbolic and / or language skills in various modes.
- Use Science and Technology effectively and critically showing responsibility towards the environment and the health of others.
- Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.

The developmental outcomes envisage learners who are also able to:

- Reflect on and explore a variety of strategies to learn more effectively.
- Participate as responsible citizens in the life of local, national, and global communities.
- Be culturally and aesthetically sensitive across a range of social contexts.
- Explore education and career opportunities.
- Develop entrepreneurial opportunities.

The revised National Curriculum Statement attempts to embody and uphold a democratic vision of the society and the citizens that should emerge from our school system.

By means of the Learning Area Statements, the Revised National Curriculum Statement identifies goals, expectations and outcomes to be achieved through related learning outcomes and assessment standards. The learning outcomes for each Learning Area are provided later in this document. The assessment standards are in the actual Learning Area Statements that are published as Addenda to this document.

The outcomes and assessment standards emphasise participatory, learner-centred and activity-based education. They leave considerable room for creativity and innovation on the part of teachers in interpreting what and how to teach.

The South African version of outcomes-based education is aimed at stimulating the minds of young people so that they are able to participate fully in economic and social life. It is intended to ensure that all learners are able to develop and achieve to their maximum ability and are equipped for lifelong learning.

A High Level of Skills and Knowledge for All

The Revised National Curriculum Statement aims at the development of a high level of knowledge and skills for all. It sets and holds up high expectations of what South African learners can achieve. Social justice requires that those sections of the population previously disempowered by the lack of knowledge and skills should now be empowered. The Revised National Curriculum Statement aims to provide for a stronger base from which to enable the development of a high level of skills and knowledge for all. It does so by specifying the combination of minimum knowledge and skills to be achieved by learners in each grade and setting high, achievable standards in all the Learning Areas.

Clarity and Accessibility

The revised National Curriculum Statement aims at clarity and accessibility both in its design and language. Two design features – learning outcomes and assessment standards – clearly define for all learners the goals and outcomes necessary to proceed to each successive level of the system. In addition, the revised National Curriculum Statement will be available in all official languages and in Braille.

Progression and Integration

The principle of integrated learning is integral to outcomes-based education. Integration ensures that learners experience the Learning Areas as linked and related. It supports

and expands their opportunities to attain skills, acquire knowledge and develop attitudes and values across the curriculum.

It is important that the curriculum sets out progressively more complex, deeper and broader expectations of learners. Conceptual progression is a term used to describe this feature of a curriculum. In the Revised National Curriculum Statement, the assessment standards in each Learning Area Statement provide the conceptual progression in each Learning Area from grade to grade.

At the same time, learners should not deal with the assessment standards in isolation. Links must be made within and across learning outcomes and Learning Areas. The achievement of an optimal relationship between integration across learning areas and conceptual progression from grade to grade are central to this curriculum.

The ongoing development of teachers, school management teams and departmental support personnel is an important facet of this goal.

Share-Net is co-ordinated from the Wildlife & Environment Society of S.A (WESSA) in the Umgeni Valley Nature Reserve, KwaZulu-Natal. The office operates alongside the SADC Regional EE Centre to provide stronger support to environmental education initiatives in the Southern African region.

Printing of resources occurs mainly at the Share-Net office, but an increasing number of resources are produced in other regions.

A comprehensive price list and order form is available on request. Should you have further queries about Share-Net's support services, please don't hesitate to contact the Share-Net staff:

- **Lausanne Olvitt**
(project manager and materials development)
- **Nathi Ndlovu**
(mail-order service)
- **Michelle Venter**
(printing service)

Tel: 033 3303931
 Fax: 033 3304576
 sharenat@futurenet.co.za



SHARE-NET



PEOPLE, PLACES & PUBLICATIONS
 for
 ENVIRONMENTAL EDUCATION



Share-Net is a South African-based informal networking project that supports environmental education and development in the SADC region.

The project strives to be responsive and participatory, performing the following functions:

- Develop and review learning support materials for environmental education
- Support school teachers and curriculum developers
- Support professional development courses in SADC countries
- Provide low-cost printing & publishing facilities to members of the community
- Provide a low-cost mail-order support service
- Maintain a network of people, places and publications in environmental education
- Support environmental education centres
- Support the South African National Environmental Education Project (NEEP)

Share-Net materials are copyright-free for educational purposes and redevelopment for local use is encouraged. The learning support materials can be used to complement one another and provide a rich, integrated learning experience.

Field Guides:

The Hands-On and Beginners' Guides Series are A5 booklets for fieldwork. Emphasis is on observing common ecosystems and species through 'hands-on' experience.

Taking Action!

The booklets in this series aim to equip people with information and ideas to take effective environmental action in their local communities. This includes catchment action, the 'How-To' series and community-based natural resource management booklets.

EE Policy and Theory:

Environmental Education practitioners need access to up-to-date policy, curriculum and educational initiatives. The booklets in this series are useful tools to support professional development in the SADC region.

E-Info Box:

This cardboard box contains a carefully selected range of teaching support materials for fieldwork and classroom use. Included are: the Hands-On libraries (with display stands), 60 Enviro Fact Sheets, indigenous knowledge leaflets and the practical 'How-To' series.

Enviro Picture-Building:

Through constructing and discussing pictures of the environment, learners gain confidence in articulating and responding to local environmental issues.

Indigenous Knowledge:

The IK & Today Series has been developed to mobilise indigenous knowledge for school and community contexts. The booklets are centred on the wisdom in early patterns of life and challenge us to live more sustainably today.

School Environmental Policy and Management Plan:

A school environmental policy is a statement of intentions and principles for improving a school's educational and environmental performance. The pack contains a series of curriculum-related folders to support teachers and principals.

Materials on CD:

The E-Info package is also available on CD as a resource library and to facilitate redevelopment of materials for local contexts. UNESCO'S multimedia programme "Teaching & Learning for a Sustainable Future" is available to support professional development.

EE AND OBE RESOURCES			
A Year of Special Days - 2003	10.00		
Schools & Sustainability Pack	35.00		
Enviro Clubs Action Pack	14.00		
Environments & Methods (EE Trends)	10.00		
Methods, Activities & Theories for EE Centres (Wigley)	14.00		
Env., Dev., & EE (EET)	10.00		
Developing Curriculum Frameworks	18.00		
Enabling EE: guidelines for EE Policy & Strategy in SADC states	18.00		
Active Learning in OBE: Environmental Learning in South African Schools	30.00		
Environment & Active Learning in OBE (NEEP)	10.00		
Enabling EE Processes in Teacher Ed	14.00		
OTHER RESOURCES			
Enviro-Fact Sheets: set of 60	30.00		
State of Env. in S.A. booklet for schools	10.00		
Sustainable Development for Durban	10.00		
Household Enviro Management	10.00		
Interactive Drama for Enviro Educators	10.00		
Bridging the Gap	10.00		
A Quiet Time - <i>creative solitaire writing</i>	10.00		
Remnants - <i>poems (Wright & Roff)</i>	10.00		
A Sense of Wonderful - <i>poems (Roff)</i>	10.00		
Eco-Puzzles: <i>set of 5 ecosystems</i>	10.00		
Share-Net Address Book	10.00		
Waste Management Pack	14.00		
The AIDS Healers (Mkhize)	10.00		
Dictionary of Popularly Traded Plants in SA	14.00		
E-Info CD (incl. Enviro Facts & Hands-On Booklets)	50.00		
E-Info Box	180.00		
WOW poster	5.00		
TOTAL			

All prices are inclusive of postage (except outside South Africa - please ask for separate order form for postage in southern Africa) Please send this order PLUS payment (cheque or postal order) to:

Share-Net Tel (033) 330-3931
P O Box 394 Fax (033) 330-4576
Howick, 3290
sharenet@futurenet.co.za

Name

Address

Tel

Fax

Order No. (If applicable)
(N.B. Organisations that will pay on invoice MUST supply an order number.)

A cheque / postal order for R is enclosed

For direct deposits - our bank details are as follows:

First National Bank
Howick Branch
Branch No: 220725
Account No: 525 300 37 988
Account Name: WESSA
Ref: SN-01
(please fax your deposit slip to us with this order form)

Please note: Resources will only be sent on confirmation of payment.

Additional Comments:

ORDER FORM

October 2003

SHARE-NET



People, Places &
Publications for
Environmental Education



Share-Net is also supported by SHELL and GOLD FIELDS

APPENDIX E: SHARE-NET ORDER FORM / PRICE LIST (October 2003)

HANDS-ON SERIES (field guides to ecosystems)	Price	No.	Cost
INLAND LIBRARY			
Stream and Pond Life	10.00		
Soil and Compost Life	10.00		
Grasses and Grassland Life	10.00		
Common Household Life	10.00		
A Forest Community	10.00		
Life Around a Waterhole	10.00		
COASTAL LIBRARY			
East Coast Rocky Shores	10.00		
East Coast Estuaries and Mangroves	10.00		
East Coast Reefs	10.00		
East Coast Dunes	10.00		
East Coast Sandy Shores	10.00		
OTHER HANDS-ON BOOKLETS			
Vlei and Marsh Wetlands	10.00		
Schoolyard Life	10.00		
Fynbos Life	10.00		
ZULU-ENGLISH field guides (short supplements)			
Grassland Life / <i>Utshani</i>	2.00		
Stream & Pond / <i>Impilo yasemanzini</i>	2.00		
Soil & Compost / <i>Umhlabathi nomquba</i>	2.00		
Forest / <i>Umphakati wezitshalo zehlali</i>	5.00		
ENVIRO-PICTURE BUILDING GAMES AND PUZZLES			
Games <input type="checkbox"/> Farm <input type="checkbox"/> Urban Jungle (Tick box) <input type="checkbox"/> Reserves & Neighbours	40.00		
Puzzles <input type="checkbox"/> Farm <input type="checkbox"/> Urban Jungle (Tick box) <input type="checkbox"/> Reserves & Neighbours	20.00		
Red Board (pocket chart)	40.00		

BEGINNERS' GUIDES	Price	No.	Cost
Freshwater Fishes of Natal	10.00		
Common Marine Fish	10.00		
Some Common Spiders	10.00		
Highveld Spiders	10.00		
Dragonflies and Damselflies	10.00		
Some Trees of the Okavango	10.00		
Trees of Umgeni Valley	10.00		
Some Common Waterbirds	10.00		
Common Butterflies	10.00		
Seaweeds (Algae)	10.00		
Ferns of Ferncliffe	10.00		
Owls	10.00		
Common Orchids (KZN-Drakensberg)	10.00		
Equip. for Measuring Weather Conditions	10.00		
ACTION SERIES			
28 Alien Plant Invaders in KZN	10.00		
Eradicating Invading Alien Plants (KZN)	10.00		
Hack Attack Pack	4.00		
Grasslands (<i>Kotze & Morris</i>)	10.00		
Riverine Vegetation in Natal	10.00		
Health Gardening	10.00		
Growing iNcema	10.00		
Knowing & Growing Muthi Plants	10.00		
Greening the KwaZulu-Natal Coast <input type="checkbox"/> English or <input type="checkbox"/> Zulu (tick box)	12.00		
Greening the KwaZulu-Natal Midlands	12.00		
Greening SA Schools: Teacher support pack (Indigenous Gardening)	30.00		
How To Series: 8 instruction sheets for practical projects, e.g. trench garden	10.00		
◆ Greening Booklet (general guide to planting trees in SA)	12.00		
◆ Sustainable Urban Greening Strategies	12.00		

TEACHERS' GUIDES	Price	No.	Cost
Soil is Life	14.00		
Water is Life	14.00		
Forest Fun	14.00		
The Greenhouse Effect	14.00		
Arbor Day	14.00		
Creative Encounters	10.00		
Nocturnal Encounters	10.00		
Making Meaning - trail tips	10.00		
Learning to Grow - Umthathi <input type="checkbox"/> 1 <input type="checkbox"/> 2	14.00		
Bird Pack	50.00		
WATER QUALITY RESOURCES			
Mini-SASS sheets (set of 5)	5.00		
SWAP Starter Kit	15.00		
Water supply services in KwaZulu-Natal: an overview of legislation	10.00		
Water Quality Monitoring field guide	10.00		
<i>Wetlands-Use: 1: Wetlands & People</i>	10.00		
<i>2: How Wet is a Wetland?</i>	10.00		
Peatlands of South Africa	10.00		
Wetlands Pack	30.00		
INDIGENOUS KNOWLEDGE (IK)			
IK EEASA Monograph (1999) - collection of papers, articles & stories from around southern Africa	30.00		
IK Handbooks: 1. IK systems in EE within communities in southern Africa	15.00		
2. Schools within the community:	15.00		
Series of 3 SA booklets (<i>Trees, Goats & Spirits; From Grain Pits to Silos; Beer, Ants & Ancestors</i>)	10.00		
Soil conservation through IK practices in Swaziland	5.00		
Tales of Indigenous Trees of Zimbabwe	5.00		
Collection of IK perspectives-Tanzania	5.00		

APPENDIX F SUMMARY OF TERMINOLOGY IN A TRANSFORMING CURRICULUM, SELECTED ACCORDING TO TERMS USED IN THIS STUDY.

Curriculum 2005 (C2005)	Revised National Curriculum Statement (RNCS)
Language, Literacy and Communication	Languages
Human and Social Sciences	Social Sciences
Technology	Technology
Mathematical Literacy, Mathematics and Mathematical Sciences	Mathematics
Natural Sciences	Natural Sciences
Arts and Culture	Arts and Culture
Economics and Management Science	Economic and Management Science
Life Orientation	Life Orientation
Critical Outcomes	Critical Outcomes
Specific Outcomes	Learning Outcomes
Assessment Criteria	Assessment Standards
Range Statements	[dropped]
Performance Indicators	[dropped]
Learning Programme	Learning Programme
Learning Programme Unit	Lesson Plan
Phase Organisers	[dropped]

APPENDIX G: SCHOOL, COMMUNITY, TEACHER AND CLASSROOM PROFILE.



DEPARTMENT OF EDUCATION

NATIONAL ENVIRONMENTAL EDUCATION PROGRAMME

GENERAL EDUCATION & TRAINING PROJECT

TEACHER QUESTIONNAIRE

A: School and community profile

1. Name of school:
..... *HOGONZA PRIMARY SCHOOL*
2. Which grades are offered at your school?
..... *FROM GRADE I - GRADE 7*
3. What is the current status of environmental learning in your school?
..... *N/A*
4. In which learning areas is environmental learning featured or practiced in your school?
..... *FROM HSS, NS, & LO*
5. Do you have learning support materials for environmental learning available at your school? List a few examples.
..... *NO. We have no learning support materials*

6. Do you have access to learning support materials for environmental learning outside of your school? If so, list a few examples.

No

7. Does your school have any links to, or use of centers or NGO's that support environmental learning in the Curriculum? Describe these linkages, briefly.

No. Except Laysanne Olive link
Umgeni Valley project

8. Is your school Governing Body and principal supportive of curriculum changes in the school? Elaborate.

The principal only

9. Briefly describe the socio-economic context of your school.

The school is located in township
Our school economic rely on school fees and in donations

10. Can you identify any environmental issues in or near your school? Briefly describe them.

MASISEBENZISANE GARDEN PROJECT
AT KUYAMEVANA T/SHIP

11. Briefly describe the community - school relationship and activities.

N/A

12. If possible, include a photograph of your school in your portfolio holder.



DEPARTMENT OF EDUCATION

NATIONAL ENVIRONMENTAL EDUCATION PROGRAMME
GENERAL EDUCATION AND TRAINING PROJECT

TEACHER QUESTIONNAIRE

B: Teacher and classroom profile

1. Name GRACE ZANELE NTSHINGILA School: NOGQAZA PRIMARY
2. Which grades do you teach?
GRADE 4
3. Which learning areas are you responsible for?
LLC, MATHS, NS, HSS, LO A+C.
4. How many learners do you have in your class/classes?
41 LEARNERS
5. What is the average age of learners in your class? (provide an estimation)
9 to 12 YRS
6. What is the primary language spoken by your learners?
ZULU
7. How many years have you been in teaching?
26 YRS
8. What are your formal qualifications?
STA 10 & PTD

9. Briefly describe the main methods and approaches that you use in your teaching.

DISCUSSION FROM KNOWN TO UNKNOWN
GIVING THE EXAMPLES OF WHAT WE ARE GOING TO DO
WORK WITH LEARNERS IN GROUPS

10. Briefly describe the Learning support materials that you use most often in your teaching.

I usually use flash cards, learners' books
library books, picture books, work sheets

11. Describe the in-service training that you have previously been involved with.

OBE Training yr 2000

12. Briefly describe what you know about OBE.

New words for subjects, teachers, pupils
that OBE is learner centred, working in groups
we assess learners, Curriculum instead of syllabus

13. What would you consider important to establish a healthy environment in / near your school?

Cleanliness in and around the
school

14. Briefly describe how you incorporate environmental learning in your curriculum planning?

When teaching NS caring about birds, plants
animals, water in our environment

15. Briefly describe any issues that you are confronted with in your classroom and/or school context.

Pupils are less concern because of poverty very difficult
to rich school needs. They are not cared by their parent

APPENDIX H TEMPLATE FOR REPORTING ON USE OF HADEDA ISLAND

**TEMPLATE FOR REPORTING SCHOOL-BASED IMPLEMENTATION
OF *HADEDA ISLAND***

1. Describe the approaches and activities you used with your learners when using the *Hadedda Island* materials.

2. Were the *Hadedda Island* activities relevant to your school & community context?

3. With what Learning Areas do these activities correspond?

4. Did the activities meet the requirements of these Learning Areas for Grade 4?

5.a. To what extent did the *Hadedea Island* activities relate to issues of human rights, a healthy environment, social justice and inclusivity?

5.b. Were these issues dealt with separately or in combination with one another?

6. Did you use other learning support materials to support your classroom activities?

7. Describe how you assessed learners during the *Hadedea Island* theme?

8. Were you able to assess any environmental learning outcomes?

5.a. To what extent did the *Hadedda Island* activities relate to issues of human rights, a healthy environment, social justice and inclusivity?

5.b. Were these issues dealt with separately or in combination with one another?

6. Did you use other learning support materials to support your classroom activities?

7. Describe how you assessed learners during the *Hadedda Island* theme?

8. Were you able to assess any environmental learning outcomes?

9. How would you change / improve this learning programme if you were to do it again?

10. Could you make recommendations to improve (i) the *Hadedda Island* Big Book and (ii) the accompanying teacher guides and support materials.

APPENDIX I: EXTRACTS FROM REFLECTIVE JOURNALS

To narrate each case, I need to describe the school and teacher context, what activities took place around H-I, and how they related to the RNCS's 1st principle.

Tues 06 May: Howick Prep

Visited Howick Prep at teatime. Spoke first to Sharon who seems reserved but supportive. She was actually pleased I'd arrived unannounced because she now also has a problem with this Friday (kids out for music evening rehearsal). I explained that I'd need to observe a more typical lesson, not just a fun, ending lesson such as the election day. She indicated that the H-Island programme is not holding together as she'd have liked. She feels they've spent too much time doing habitats, next time round, would set groups (13).

AREA OF FOCUS	METHOD OF INVESTIGATION
1. School context	template; observations; photographs.
2. teacher context	template
3. Use of LSMS	template; learner portfolio; annotated photographs; video; own observations
4. Learning area links and assessment	template; daybook; interviews
5. 1st Principle of RNCS	template; interviews; learner portfolio; video; own observations

Template: H-I daybook: 1
 own observ: 111
 learners work: 11
 photos: 11

NOTES TAKEN BY CHERYL LE ROUX DURING MY
EEASA PRESENTATION: 23 JUNE 2003

Revised CTS - students at

- Rethink of aspects of edu
- How edu resourc es
- HR, equity
- Stretching teacher of edu
- LSM to help teachers
- 5 principles of RNCES
- educ / learnin activiti

NCS principle 1

- 2 caps - child gr 4
- new educ ed
- decisions on how it can
- flexibilities & opportunities
- material to be

What happens when material

Questions

Obj of the material? Dilemma of
more work should be
wide range

Concerns - hybrid urban sch

- vectors have to
- teacher guide
- tool for integratio
- inclusivity not con
- accessibility - tea
- assessment - d

Teacher's guide - shows p
aligned program

Final PJ - gets up on

Building here are living

03 July 2003

Following Bheki's comment at EEASA re-
cultural associations of the Madaba,
I spoke to Thobile Nzinande about
stories about Madabans in Zulu culture.
She explained that rural people,
especially old folk, believe that a
Madaba flying over a house calling
loudly means a funeral is to follow.

I need to pursue this further with
Bheki & Mbonjeni Mthobeni.

12th July

Have wrestled yet again with the good old
research question: How about this?

WHAT GUIDING ORIENTATION
DOES THE 1st PRINCIPLE OF
MORNING THE RINGS PROVIDE FOR THE
DEVELOPMENT & IMPLEMENTATION
OF ENVIRONMENTAL LSMS? (95)

APPENDIX J: SUPPLEMENTARY QUESTIONNAIRE (SQ) GIVEN TO THE TEACHERS AT HOWICK PREPARATORY SCHOOL.

Supplementary Questions

1. How many learners attend the prep school?
2. Please give a bit more detail as to why you describe the school and community as "closely involved".
3. What facilities and equipment are available in the school?
4. What extramural activities are available to learners ? To what extent are these compulsory?
5. Please elaborate a bit more on the school's approach to curriculum changes. To what extent have these altered the school, the ethos, the teaching methods, staff attitudes etc?
6. I have written : "Learning support materials most commonly used by Mrs Bulcock are "computers, resource materials, the education library and worksheets". Please explain what you mean by "resource materials" and "the education library".
7. I'd like to create a clearer profile of the learners. Please describe them (generally) in a few lines e.g mixed ability, parental support, interests, work ethic etc etc...
8. Can you say a bit more about the staff workshops you've had r.e OBE & C2005?
9. Are you responsible for all learning areas or all except Life Skills and Art and music?
10. How would you describe your individual teaching approaches or strategies?



MY BLUEPRINT FOR A BIRD FEEDER BY Lisa

MY LIST OF MATERIALS

Wire, Yoghurt tub,
polystyrene tray, string
and fruit

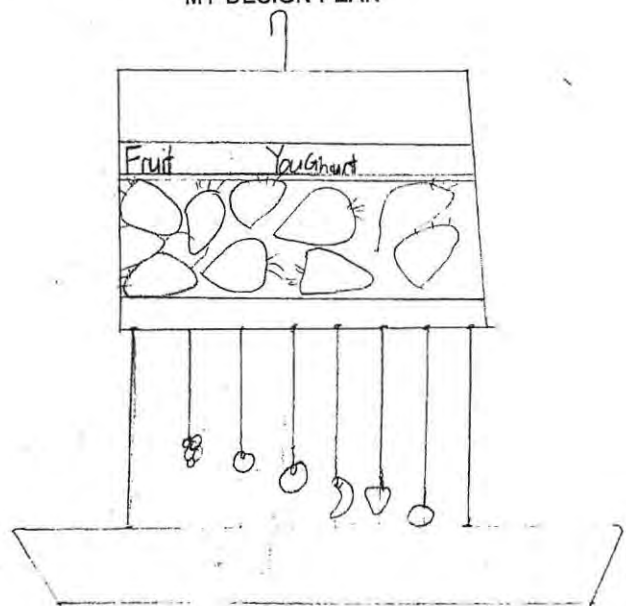
MY LIST OF TOOLS

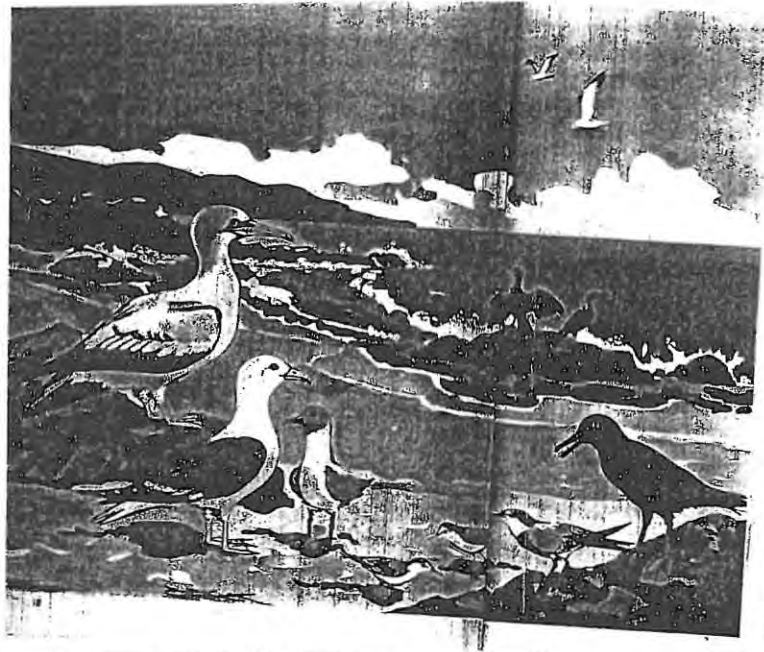
Soldering iron.

MY INSTRUCTIONS

You burn a hole in
the top of the yoghurt tub
and put a hooked piece
of wire in then burn
more holes in the
bottom of the Yoghurt tub
at different sides and then
put fruit in.

MY DESIGN PLAN



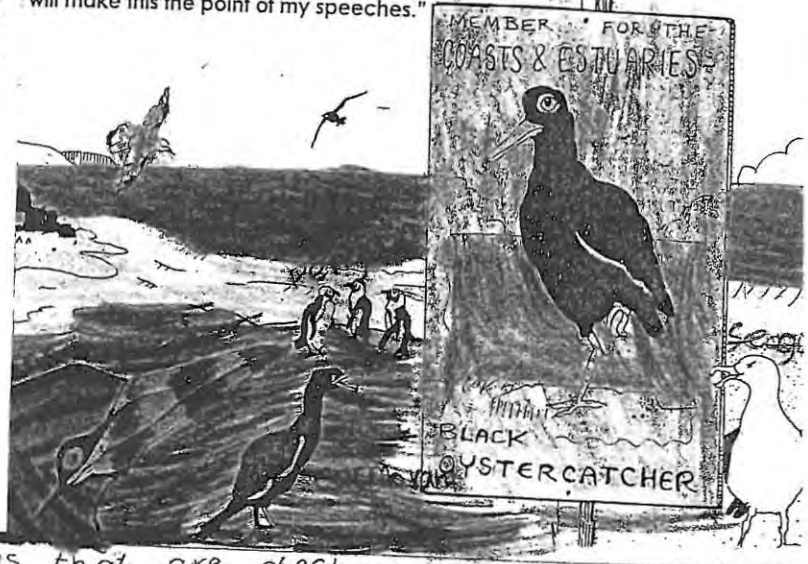


SEASHORE
Sea shores may be either sandy or rocky, possibly with lagoons or river mouths, which will have salty water because of the closeness of the sea. Sandy shores, often bordered by dunes on which coarse grass and small stunted bushes grow, are suitable for sandpipers and other beach birds. Rocky shores, with rocks extending far out to sea covered with water at high tide, and with rocky pools continuously washed by the waves, are the homes of birds that feed on molluscs, fish and other food not found on sandy beaches.

- 1 Southern Black-backed Gull
- 2 Cape Gannet
- 3 Grey-headed Gull
- 4 Cape Cormorant
- 5 White-fronted Sandpiper
- 6 Common Tern
- 7 Black Oystercatcher



The birds of the coasts and estuaries chose the Black Oystercatcher. "We must look after our river mouths and beaches. I will make this the point of my speeches."



It is important to protect the sea.

We must protect our sea because people pollute our the sea.

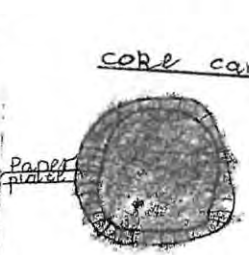
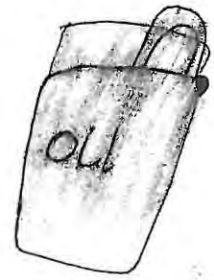
We must protect our sea because we don't look after our sea.

We must not let people kill our fish.

1) We must not let people drop out in the sea.

2) People must not catch too many fish.

Things that are destroying the coast.










I.D. NO 830211
 SA-BURGER/S.A. OEFTEZEBW

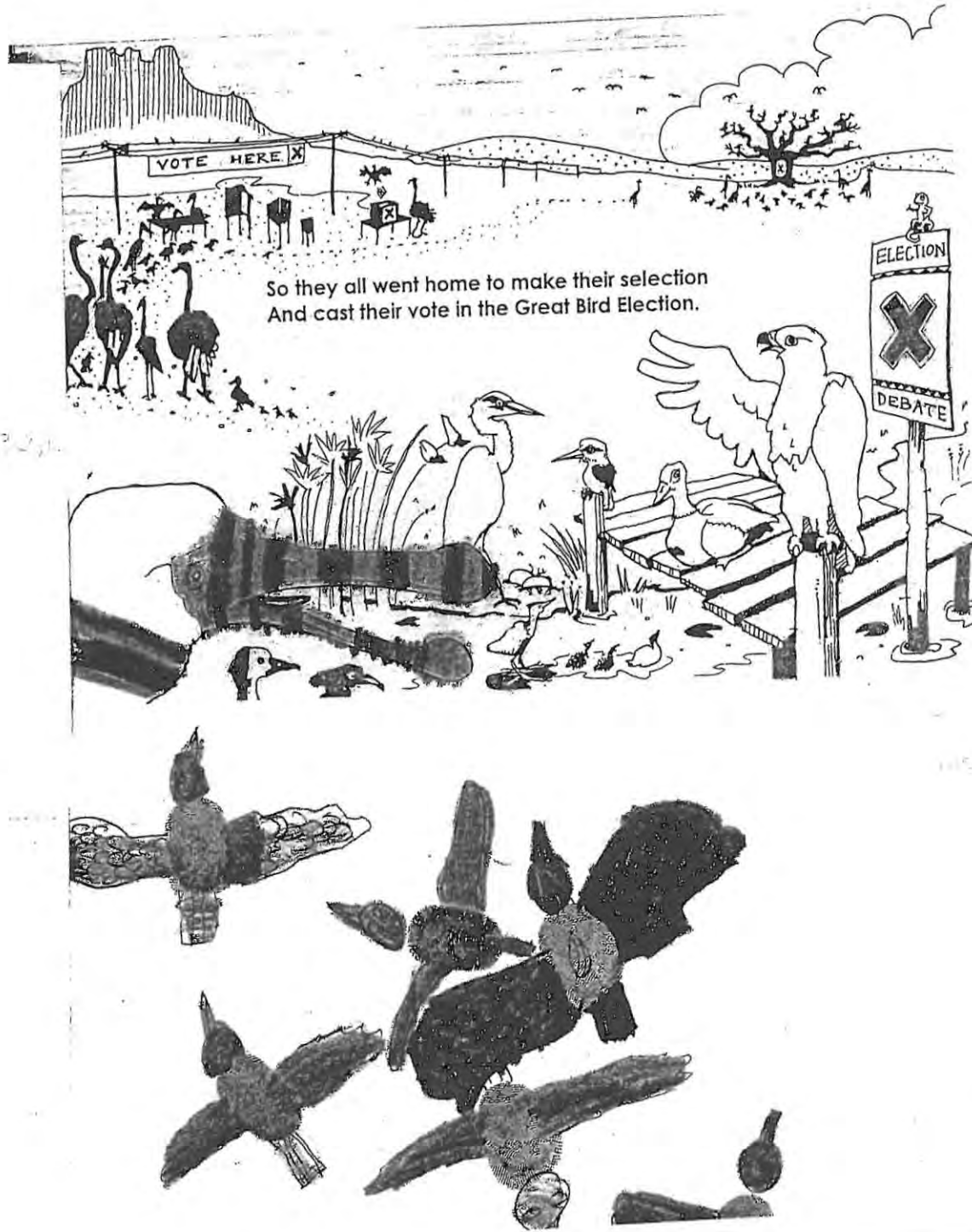
VAN/SURNAME
 Mwelase

VOORNAAM/FORENAMES
 SHARON BEVERLEY
 GEBOORTEDATUM/DATE OF BIRTH

South AFRICA
 GEBOORTEDISTRIK/DISTRICT OF BIRTH
 DATUM UITGEREIK/DATE OF BIRTH
 1993-05-11

**BALLOT SHEET
 FOR THE
 GREAT BIRD ELECTION**

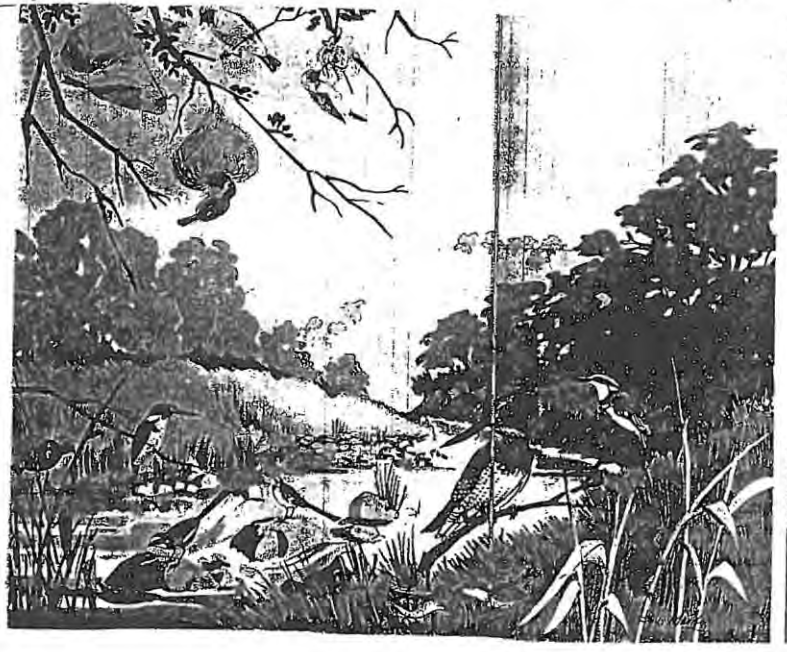
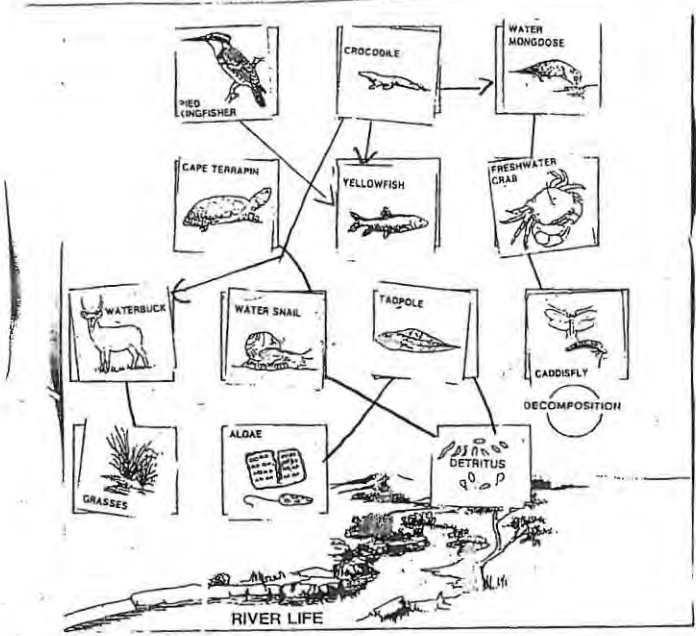
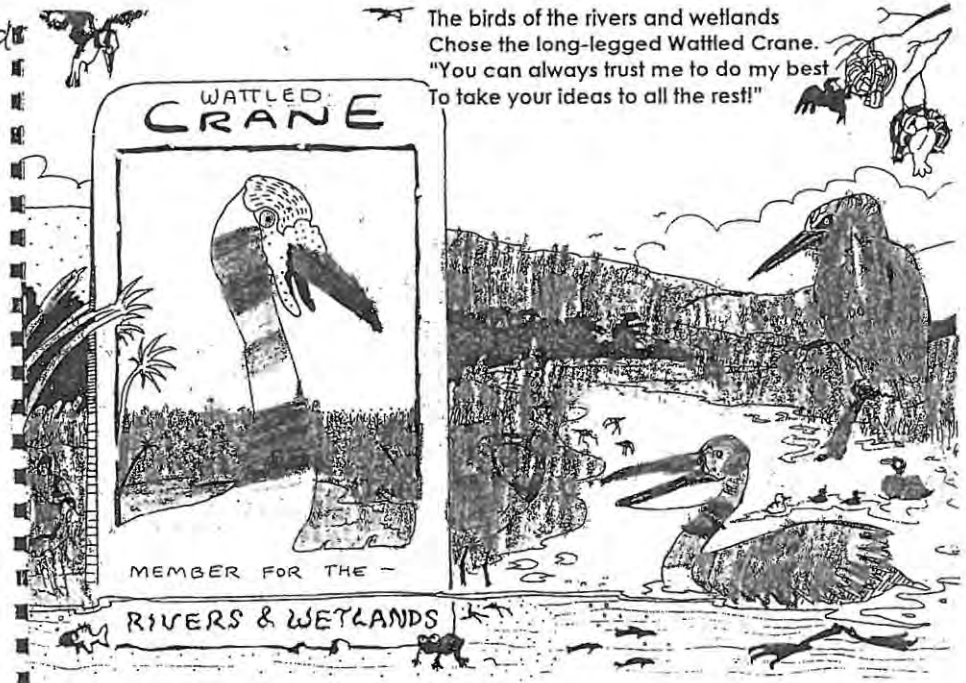
HABITAT/BIRD	SYMBOL	X
Coast & Estuaries (BLACK OYSTERCATCHER)		<input checked="" type="checkbox"/>
Fynbos (CAPE SUGARBIRD)		<input type="checkbox"/>
Forests & Woodlands (WOODPECKER)		<input type="checkbox"/>
Grasslands (BLUE SWALLOW)		<input type="checkbox"/>
Rivers & Wetlands (WATTLED CRANE)		<input type="checkbox"/>
Karoo & Deserts (OSTRICH)		<input type="checkbox"/>
Urban Areas (FERAL PIGEON)		<input type="checkbox"/>



Place a X in the box next to the habitat/bird you wish to choose

Why we need to protect the wetland

- 1) over fish
- 2) development
- 3) destroying vegetation to the river
- 4) wattled crane is endangered
- 5) pollution and litter



RIVERS AND STREAMS
 Rivers and streams are always freshwater habitats and found inland. They have turning water between banks that are usually covered with dense vegetation, rocks and sedges, bushes and even trees. This vegetation provides shelter and food for many species of birds.

- 1 Masked Weaver
- 2 Golden Bishop
- 3 Half-collared Kingfisher
- 4 Pied Wagtail
- 5 Nile Kingfisher
- 6 Giant Kingfisher
- 7 Red Bishop
- 8 Common Waxbill



APPENDIX M: SAMPLES OF LEARNERS' WORK FROM NOGQAZA
PRIMARY SCHOOL DURING PHASE THREE.

18 March 2003 - The Solar System

The sun and all the planets which orbit in space make up the Solar System.

There are nine planets

Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune and Pluto.

We live on earth. Earth is like a huge spaceship that carries us through space at a speed of 30 km a second. It takes 365 days to travel once around the sun.

The earth is the only planet that is covered by the oceans.

29 April 2003

bird

Habitat

sparrow

under the eaves of house
trees

hadida

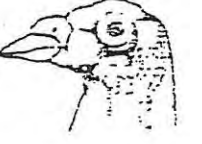


trees


an owl


under the roofs of house in
buildings, hollow trees

doves

trees

Shape of Beak	Example of Bird	Type of food eaten
	PIGEON	seeds and berries berries
	SWALLOW	worms and insects
	SPARROW	Seeds fruit insects

	Humming Bird	Insects
--	--------------	---------

	EAGLE	Seeds, melies insects P.X
---	-------	---

NOTES

IF birds beak is sharp and long, it eats insects and even small. IF a bird's beak is short and blunt it will eat seeds only.

14 May 2003 Birds

There are many different of birds in South Africa. Some eat seeds, like sparrows, doves, robins and guinea-fowl. Seeds - eaters are usually smaller birds. Birds of prey are bigger and eat small animals like rat, mice, frogs, worms, insects and small birds. Examples of birds of prey are owls, cranes, black-eagles, vultures and hawks

Birds have no teeth. They use their beaks to perch their food and swallow small pieces. Their beaks are adapted to the kind of food the birds eat

These birds' beaks are adapted for tearing flesh.



An owl



A vulture

An eagle

These birds eat frogs or fish.



A pelican



A duck

These birds have long thin beaks for catching insects and worms.



An avocet - A heron -

A pigeon

These birds' beaks are short and strong for eating seeds and grain.



A sandpiper - A guinea fowl - A sparrow.



Feet of birds

20 May Homework

~~Name two differ~~

1. Name two different kinds of birds.

2. Give two examples of seeds eaters.

3. Give two examples of birds of prey.

4. What do you call the feathers which are found on the wing and the tail?

5. Young birds are covered by _____ feathers.

1. Example of the two different kinds of birds are seeds eaters and birds of prey ✓

2. Example of seeds eaters are sparrow and dove ✓

3. Example of birds of prey are hoopoe and pelican. ✗

4. The ~~quill~~ quill feather ✓

5. Young birds are covered by ^{down} eye feathers. ✗

**APPENDIX N: EXTRACT FROM INTERVIEW TRANSCRIPT: NOGQAZA
PRIMARY SCHOOL.**

- LO Some of the questions only one of you will want to answer; sometimes you'll both need to say what you think. But, my first question is: I'd like you to describe for me quite briefly how you worked with Hadededa Island with your classes. What did you start with, what were the main activities that you did, what did you focus on etc?
- Mrs N We just introduced the names of the birds. We talked about the names of the birds in their environment.
- LO And when you say 'in their environment' do you mean in their habitats or locally?
- Mrs N The names of the birds locally; where they live around the school.
- LO Oh, OK.
- Mrs N The birds they are used to see around the school and in their homes.
- LO OK, so you started with what is familiar to them, what the children already know.
- Mrs N Ja
- LO That's a very good strategy, yes!
- Mrs T And then, the habitats.
- LO Did you study the habitats?
- Mrs T We named...
- LO Oh, you named them? OK.
- Mrs T Yes.
- LO Alright...
- Mrs T Their sounds.
- LO Oh. Yes. And how much time did you spend on each of these things?
- Mrs N Hmm, on all the work, I think six weeks.
- LO Six weeks in total?
- Mrs N Ja, it was about six weeks because we had to name the birds and refer them to this Hadededa Island because we also knew we needed to see this Hadededa Island on the [indistinct] line....
- LO Oh, in the mornings?
- Mrs N In the early morning. Before we go to that big book. Ja.
- LO And now, it's not a question I've got here, but I was talking to some people a little while ago and they said to me that in Zulu culture inkankane means quite bad luck; and that if it flies over your house and it's calling....
- Mrs T Ja, ja, [laughs]
[Mrs N also laughs]
- LO Is that correct?
- Mrs N But, we don't know how true is that....
- Mrs T No, it's not correct.
- LO But is it something that is commonly known?
- Mrs T Yes, common, common.
- LO Because I hadn't heard about that until this person who is a Zulu man from Pietermaritzburg, and he said that to me. And I said , oh but all the Zulu ladies at work they said nothing!
- Mrs N Because sometimes they said, when it makes a sound and pass through, they say somebody's pregnant.
- LO Oh, pregnant! OK, so there's two stories.
- Mrs N Ja [laughs].
- LO Right! Ummm, And do you think that your learners know those stories?
- Mrs T Yes. The first one.
- LO The one that somebody is going to die.
- Mrs T Ja.
- LO And did that affect the way they interacted with Hadededa Island? Like when you say Hadededa, inkankane, it's a nice bird, we're learning about it? Were they affected by it because of the story that they know?
- Mrs T No.....
- Mrs N No, we didn't go into that.... [slow, quiet response]
- LO OK. So you don't think it's a problem then....

Mrs T No.
LO ...calling the book Hadedea Island?
Mrs T No.
LO It's not something that makes it not work because it's...
Mrs N No. They were interested. The lessons from Hadedea Island interested them because they like to imitate that noise made by the Hadedea Island and all that noise made by the birds.
LO Yes.
Mrs N Cacophony.
Mrs T [laughs]
LO And they've learnt that new word have they?
Mrs N Ja.[laughs]
LO And hopefully they don't make too much of a cacophony when they're in the class!
Mrs T Ja! [laughs]
LO OK, so if we summarise then what you did in the six weeks was you looked at birds, you introduced birds, while looking at what they children already know about the local birds and the bird names...
Mrs T Ja
LO And then you looked at the habitats and where the birds live....
Mrs T Ja...
LO And then you looked at...
Mrs N The sounds....
LO You looked at the sounds that birds make....
Mrs T They listened the cassettes.
LO Oh ja! The cassette from the bird pack. How useful was that Bird Pack? I know you've used the cassette, but were there other things from that pack that you used?
Mrs N Ja, they were useful.
LO What did you use?
Mrs N Because we have to put the picture on the wall to see these birds, some of the birds they don't ..
LO Oh, the posters that go in the Pack.
Mrs N And even the cassette, they had the noise of the birds which they didn't know.
LO Hmm. And did you use any of the activities? Because the pack also has plans for teachers. Did you use any of those, or did you make your own?
Mrs T You mean activities? [confused]
LO Yes, in the Bird Pack?
Mrs T No, I didn't. The activities....
Mrs N Do you mean these activities for what?
LO No. In the pack they came with the poster and the cassette and then in those plastic things there were also ideas for lessons.
Mrs T OK!
LO And I was just wondering if you had used those or not.
Mrs T No....
LO So you relied on your own ideas for how you would work with your learners...
Mrs N Ja.
LO That's great.
Mrs N And then we just considered the book, the big book...
LO Yes...
Mrs N And how we [indistinct] with the big book.
LO Yes. And now tell me, when you were going through these things, the names, the habitats, the sounds, did you do that first, and then bring the book and the story in afterwards, or were you doing them at the same time?
Mrs N No... we did the names first and then the other day we did the big book.
LO OK. And did you read the book all at once? Maybe it was different in both of your classrooms? But did you maybe read pages 1 to 4 and then stop and then go back, page 5 and 6 a few days later?
Mrs N Ja, ja
Mrs T Ja, we did it in pieces.
LO In pieces. So you didn't spend one lesson and go through it all at once?
Mrs T No, no.
LO OK. Alright.... And then.... Did you assess the learners' understanding and progress. Did you, while you were working with the Hadedea Island things over the six weeks, were you able to assess the learners' work? As part of your term assessment, was there anything that you

did...?

Mrs T [pause] I didn't do the assessment.

LO OK.... And you, Mrs N.

Mrs N I assessed them with a worksheet, because after we have done that part, we went to the worksheet to fill in the worksheet about types [indistinct]. For instance, the kind of birds, the bird of prey, the seed eater, then on the other side of the worksheet they wrote what do they eat, the birds of prey, what they eat. They write there. They make you do the worksheets.

LO Now, you're nodding. Did you do that as well then?

Mrs T Oh, I see. And tests. I do some tests.

LO Oh, did you?

Mrs T Ja.

LO OK

Mrs T Tests is the assessment?

LO Yes. Because assessment is just the new word for measuring....

Mrs T Oh, OK!

LO But we prefer to use assessment now because it's not only tests that can show us if the learners have learnt.

Mrs T OK...

LO Sometimes if they do a song, we can see what they've learnt...

Ms T OK, OK.....OK....

Mrs T And they do the [indistinct]

LO The worksheets

Mrs T The worksheets.

LO And did you mark those, or did they mark them in class together? How was...?

Mrs T In class. We just [indistinct]

Mrs N [indistinct]

LO So you stood in the front and said the answers to this is that, and they were responsible for...

Mrs T Yes...

APPENDIX O: INTERVIEW SCHEDULE: HOWICK PREPARATORY SCHOOL.

INTERVIEW SCHEDULE: Mrs Bulcock and Mrs Bullock
THURS 7TH AUGUST 2003-08-06

1. Briefly describe the way in which you incorporated the *Hadeda Island* Big Book into your teaching? How did you start, what emphasis did you use, activities etc.
2. How did you assess the learners' understandings and progress?
3. When you received the materials from me, what were your first impressions? Were those realised or did your expectations change?
4. Was the *Hadeda Island* book useful in supporting your curriculum activities or did it require you to deviate from your regular syllabus or even do 'unnecessary stuff'?
5. What learning areas do you think have been most directly supported by the *Hadeda Island* materials?
6. How familiar are you with the Revised NCS and its 1st Principle etc?
7. How do you imagine bringing this sort of policy to life in your classroom? Are there things that are or can be done in the classroom to strengthen it?
8. As you worked with *Hadeda Island* with your learners, were you conscious of the potential focus on the relationship between social justice, a healthy environment, human rights and inclusivity? Do you feel your activities developed this particular approach or were there other areas that you developed instead?
9. Was *Hadeda Island* helpful or distracting in having this kind of focus to teaching?
10. Have you been able to assess the extent of the learners' environmental learning?
11. Do you think the experience has influenced YOUR teaching, your style or understanding of environmental. issues etc?
12. How suitable is *Hadeda Island* for Grade 4?
13. Generally speaking, is a learning support material such as *Hadeda Island* appropriate to the learners you have in your class? Was it well received or not? Did they relate to it? What, if anything, have they gained from it?
14. To what extent did the video camera and my presence in the classroom influence the way it has played out?
15. What supplementary materials did you use with *Hadeda Island* and how beneficial were they?
- 16.. If you were to refine it for next year, what changes would you make or advice to me to make changes? How long would you run it for and how?

**APPENDIX P: LETTER OF PERMISSION FROM THE KWAZULU-NATAL
EDUCATION DEPARTMENT**



PROVINCE OF KWAZULU-NATAL
ISIFUNDAZWE SAKWAZULU-NATAL
PROVINSIE KWAZULU-NATAL



DEPARTMENT OF EDUCATION AND CULTURE
UMNYANGO WEMFUNDO NAMASIKO
DEPARTEMENT VAN ONDERWYS EN KULTUUR

PIETERMARITZBURG REGION

ISIFUNDAZWE SASE PIETERMARITZBURG

PIETERMARITZBURG STREEK

Address: 228 Pietermaritz Street
Ikheli: Pietermaritzburg
Adres: 3201

Private Bag:
Isikhwama Seposi:
Privaatsak:

Private Bag X9044
Pietermaritzburg
3200

Telephone:
Ucingo: 033-3552452
Telefoon:
Fax: 033-3943214

Enquiries:
Imibuzo:
Navrae: Dr DNW NGCOBO

Reference:
Inkomba:
Verwysing:

Date:
Usuku:
Datum: 12/02/2003

Ms Lausanne Olivitt
FAX: 033-3304576

**RE: AUTHORITY TO CONDUCT A SMALL-SCALE ENVIRONMENTAL EDUCATION
RESEARCH PROJECT WITH TWO HOWICK SCHOOLS**

Our late response to your request is deeply regretted.

Permission is hereby granted in principle for you to conduct the abovementioned research with two schools in Howick.

The Department stresses that you adhere to the conditions stipulated by yourselves, namely, that interview activity will be conducted during break-time or outside school hours.

Kindly liaise with the District Manager, Mr V Naidu and the relevant SEM for access to the schools as well as support by Educators and Learners.

**DR DNW NGCOBO
ACTING REGIONAL CHIEF DIRECTOR**

cc Mr V Naidu: District Manager: Midlands District

APPENDIX Q: SUMMARY OF FIRST MEETING TOWARDS THE DEVELOPMENT OF THE HADEDA ISLAND BIG BOOK.

SOUTH AFRICAN ADAPTATION OF COCKATOO ISLAND

First Planning Meeting

Rhodes University Environmental Education Unit

30 October 2002

This first formal planning meeting was held in the Rhodes University EE Unit to discuss the potential of adapting Ali Garnett's Cockatoo Island to a South African context. Present at the meeting were Prof. Heila Sisitka, Ingrid Timmermans, Lausanne Olvitt, Lawrence Sisitka, Richard Kilpert and Jane Burt. What follows is a summary of the discussions and suggestions for developing this exciting project.

Potential for Local Adaptation:

The materials adapted and developed by the team would be pilot tested in primary schools in KwaZulu-Natal and the Eastern Cape. In this early phase, the materials would not be published in a full-colour book format but would be printed at Share-Net¹ as A3 size, loose-leaf, black & white line illustrations..

The team feels that, for the South African context, a stronger people-environment link needs to be developed through the books. The revised National Curriculum Statement (NCS) focuses educators' attention on the relationship between social justice, a healthy environment and human rights. Learning materials that support such a curriculum should thus reflect relationships between people and the environment as inseparable from issues of democracy and civic responsibility. The practical implications of this for a South African adaptation of *Cockatoo Island* are mainly in the artwork. The various habitats represented should include realistic evidence of human impact -- not in a way to impose these ideas on each illustration but rather to create a more realistic landscape to which learners might relate.

The team discussed options for renaming the materials. Suggestions include 'Loerie Land', 'Ubuntu Land' or 'Intaka Land'. It was also decided to work with the concept of a 'land' rather than 'an island' and develop the notion of a diverse land of which we are all a part rather than a separate island that we visit. Also, South African learners are less familiar with the notion of 'being on an island' than

¹ Share-Net is a collaborative project of the Wildlife & Environment Society of SA that develops, prints and distributes low-cost environmental learning support materials. Share-Net works closely with many relevant partner organisations (Dept of Education;

(we would imagine) Australian learners are. For the purposes of correspondence and discussion, the team has decided to adopt the name Loerie Land and review this as the project evolves.

Habitats and bird species need to be adapted to the South African context. Proposed habitats and individual species for use in Book 2 are as follows:

Grasslands	Blue Swallow (endangered)
Wetlands	Wattled Crane (endangered)
Estuaries	Pied Kingfisher
Karoo	Ostrich
Coasts	Black Oystercatcher (endangered)
Fynbos	Cape Sugarbird
Deserts	Sociable weaver
Freshwaters	African fish eagle
Forests	Woodpecker
Valley Thicket	Crested hornbill
Urban areas	pigeon

The primary focus of the Loerie Land materials is on democracy education and human rights. Links through learning support materials (mainly from Share-Net) will also encourage investigation into biodiversity studies e.g fieldwork activities, resource-based learning packs on wetlands etc.

Book 1 can be developed for Foundation Phase, modelled quite closely on the Australian version, whilst Book 2 is likely to be adapted for intermediate phase. Issues of language have been raised and will need careful consideration. Multiple languages could be used in the book (English; Xhosa;

isiZulu; Afrikaans and Sotho) or versions in different languages could be printed in Share-Net without a problematic cost implication.

Lausanne Olivitt, an M.Ed (EE) student at Rhodes University, is planning to use the action research case studies of piloting the materials for Book 2 as her thesis work. Her focus will be on the interface of the South African National Curriculum Statement, Share-Net (as a materials-producing project) and a case study of the development of Loerie Land as relevant learning support materials. The materials will be piloted in three primary schools in KwaZulu-Natal. As Lausanne is the manager of Share-Net, the link between her research and the future development of the Loerie land materials is strengthened.

Roles & Short-term Plans:

Heila Sisitka will be adapting *Loerie Land Book 1* materials

Lausanne Olivitt will be developing *Loerie Land Book 2* materials

Book 3 has been discussed briefly, but the team would prefer to develop a clearer sense of this project's scope and potential before commencing work on a third book.

Richard Kilpert has been commissioned to produce the artwork for all the materials.

Pilot testing will need to commence in schools in January 2003. Richard is therefore drafting illustrations to bring to a further discussion group in the third week of December.

Parallel to the development of Books 1 and 2 will be the development of teacher support packs with fact sheets on the bird species (in Book 2) and recommendations for classroom use such as artwork and drama.

Heila and Lausanne will contact Ali in Australia and see how we can raise funds for her to come over sometime.

Long-term Potential:

The pilot-testing phase will determine the future of this project in South Africa. As the project develops, funding can be sought for colour reproduction of the artwork, the development of support packs, teacher workshops etc. As with the Australian *Cockatoo Island*, the potential exists to produce the series in colour through a commercial educational publisher.



Diagram of a Bird

You need a pencil and ruler.
 Write the heading (as above) and underline it.
 Label the bird as you have been shown.

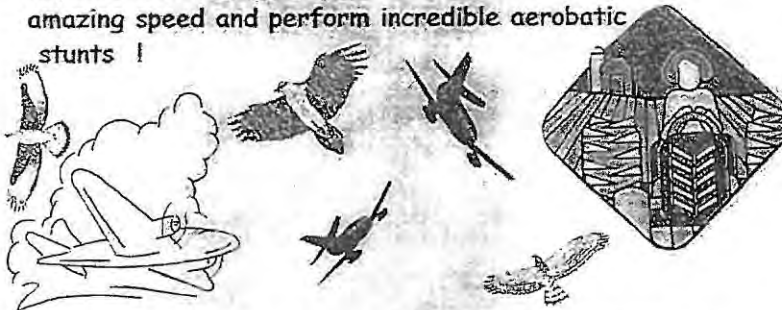
Labels for your bird.

- | | | |
|------|------|--------|
| head | bill | throat |
| back | wing | breast |
| feet | tail | toes |
| beak | | |



RAPTORS

Raptors are birds which hunt and kill for food. Some raptors hunt and feed on carrion and others are just carrion feeders. Raptors are large, powerful birds which can fly at amazing speed and perform incredible aerobatic stunts!



Unfortunately, several raptor species are endangered. This is mostly because humans have interfered carelessly in their environment. Due to changes made by humans to the environment, raptors have lost suitable hunting and breeding habitats. Some of these problems have been caused by overgrazing and droughts, depletion of suitable food sources, poisoning and lethal man-made obstructions. All these problems have led to an alarming decrease in numbers among our raptor species.



APPENDIX R: A SELECTION OF TEACHERS NOTES AND LEARNERS' WORK PRODUCED DURING EPWORTH SCHOOL'S FOCUS ON THE HADEDA ISLAND BIG BOOK.

Habitats

Definition: Unscramble these words to find the meaning of a "Habitat".

The special animal plant each live
 place natural where and can
 and grow best.

The special natural place where each animal
 and plant can live and grow best.

Examples: Give some examples of different kinds of habitats.

Wetlands

- Sea
- ponds
- bushes
- forests
- Jungles

If you were choosing a habitat, what would you look for?

- Temperature
- Water
- place
- food
- Health
- OR

Using the names below, label the habitats of South Africa on the next

Read through your notes on the different birds and habitats and then fill in the bird to match the habitat on the empty table below :

HABITAT	BIRD
Grasslands	blue swallow
Coast	black oystercatcher
barren	Ostrich
Urban areas	pigeon
Wetlands	Wattled Crane
Valley thicket	Crested hornbill
Estuaries	African fish eagle
freshwaters	fresh kingfisher
forests	Cape sugarbird
Desert	woodpecker
	kori bustard

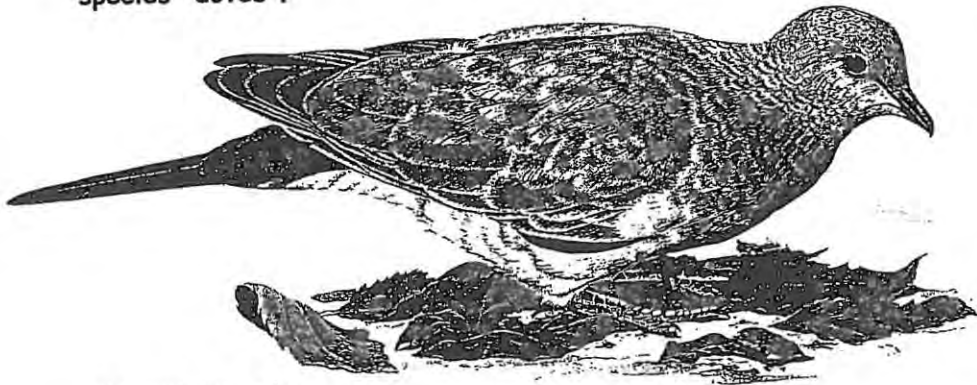
INTERESTING INFORMATION AND DISCUSSION

Urban areas (which means _____) are the habitats of many pigeons. Pigeons enjoy contact with humans. In your groups, discuss the reasons why pigeons might enjoy contact with humans.

Keywords : _____

Pigeons eat a variety of plant material, fruits seeds, insect larvae, worms and also snails.

The larger species are usually called "pigeons" and the smaller species "doves".



Go out into the garden with your group and find a pigeon.

Were you able to find a pigeon? _____

Blue swallows are found mostly in grasslands. Blue swallows feed on insects and are endangered. What does this mean?

It is very difficult to say which bird is the rarest but it is probably the Blue Swallow. Only a few breeding pairs remain in the high grasslands of Natal and the Eastern Transvaal. If these habitats disappear, the Blue Swallow could easily become extinct.

What do you understand the word "extinct" to mean?

Discuss the habitat of the blue swallow and suggest why/how they have come to be endangered.

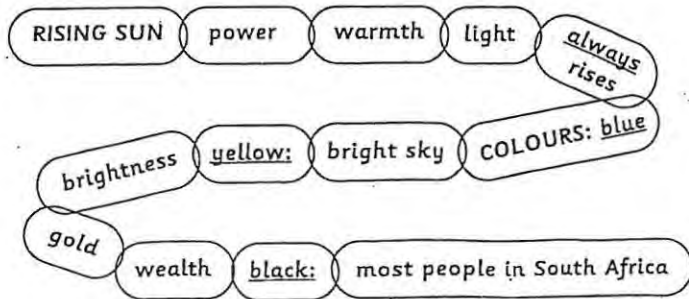
Sketch a Blue Swallow.

VOTE GATYENI - LET'S BUILD TOGETHER



PUP for Progress 

Read the logo for the People's Unity Party (PUP) and discuss what it makes you think of. Here are some ideas.



In your groups, write some word chains about your candidate. You should include something about the habitat, their appearance and their Personality.

NAME _____

DESIGN A LOGO

Political parties usually have logos which are especially designed to make us think of positive things, and to remember the political party easily.

Consider these points for your logo :

Your physical characteristics

Your personality

Your habitat

APPENDIX S: EPWORTH SCHOOL'S WORKSHEETS ON
DEMOCRACY AND HUMAN RIGHTS, PRIOR TO
COMMENCING WORK WITH THE HADEDA
ISLAND BIG BOOK.

Being a good citizen
(member) of our class.



Our class needs to be *DEMOCRATIC*. This means that every member of the class is *EQUAL*, each person is as important as the next.

South Africa has a set of rules called the *CONSTITUTION*. These rules are used to help the government run the country. South Africa is a *DEMOCRATIC* country, all South African citizens are *EQUAL*. Children are also very important. They are so important that they are included in the *CONSTITUTION*. In the *CONSTITUTION* the *RIGHTS* and *RESPONSIBILITIES* of members (*CITIZENS*) of the country are set out. Children are also *CITIZENS*.

In our Grade Four classroom, we also need to have a *DEMOCRACY*. A definition of *DEMOCRACY* is rule by, for and of the people. In Grade Four, Mr Sliedricht, Mrs Oftebro and all the Grade Four pupils are part of a *DEMOCRACY*. We need to make a Grade Four *CONSTITUTION* (set of rules, rights and responsibilities)

Finding out about democracy

... **Activity 1:** Talk about Political Parties and Government class

Talk with your teacher about the topic. You may not know exact answers - don't worry - these are difficult ideas to explain! You can use the following questions. What is 'the Government'? What is it for? How did it get there? What is an election? What is a Political Party? What Parties do you know of? Are they in our Government too?

.. **Activity 2:** Fill in words Pairs

Read this paragraph and fill in the missing words.

South Africa is a democratic country. That means the people (1) _____ for a (2) _____ they want. They do this by choosing between many (3) _____. We don't mean parties where you eat, drink, dance and have fun! No - a Party is a group of people who are interested in the way a country is run. The members of each Party choose leaders. The leaders try to persuade everyone to vote for their Party.

Every five years we have an (4) _____. On that day voters mark a paper. They mark next to the name of a Political Party they think will

My rights and responsibilities

A 'right' is something that every child must have to grow well, be happy and develop to be the best they can in life.

Every child should have:

- ☉ Enough food
- ☉ A home etc.

- c. Talk with your teacher about responsibilities. What is a responsibility? We all have rights: for example to have a home and food and a family that support us. In return we have some responsibilities, like helping in the home.
- d. Copy out and complete the blank spaces in this table. We have filled in some suggested examples for you.

Rights in the home	Rules about the right	Responsibilities
Children have the right to spend time playing.	You should not play cruel games which hurt others. You should not play games which break things.	You should play active interesting games. You should not watch television only.

We can learn peaceful ways to solve problems. We must know our rights so people can't treat us unfairly!

Why do we need a Bill of Rights? Think about these things:

- ✿ Until 1994 black people in South Africa had very few rights compared with white people.
 - ✿ Until recently in most countries women were not allowed to vote.
 - ✿ In some countries today children can be used like slaves.
 - ✿ Millions of girls around the world get no education.
 - ✿ In several countries some religions can be attacked.
- b. Here are some of the rights in our Constitution. Read them, then in pairs discuss the following situations. Go over the answers as a class.

Bill of Rights:

Our Constitution says that everyone has:

- ◆ *The right to vote if they are old enough*
- ◆ *The right not to be made a slave, or forced to work*
- ◆ *The right to freedom of religion*
- ◆ *The right to a healthy environment*
- ◆ *The right to proper housing*
- ◆ *The right to get health care, enough food and clean water*
- ◆ *The right to an education*

**APPENDIX T: A LIGHTED-HEARTED REPORT ON EPWORTH
SCHOOL'S BIRD ELECTION DAY.**

AFRICAN FISH EAGLE REIGNS!

Pietermaritzburg. Grade Fours at Epworth

Primary went to the election booths for the first time this week. In an election held in the Assembly Room on Wednesday 26th March 2003, learners had an opportunity to vote for the South African bird who 'rises above the rest'. The counted votes indicated that the African Fish Eagle was clearly the favourite. This powerful and attractive bird received the majority of votes and its victory was celebrated loudly by many voters.

The morning's voting got off to a slow and somewhat disorderly start as voters were unfamiliar with the layout of the voting booths and the correct behaviour. There were isolated reports of some people not being as co-operative as they could have been and one frustrated voter complained that "the police officers are not doing their jobs! However, on the whole, the crowds conducted themselves in a very sensible manner.

Many believe it is due to the organizational skills of the election officials that voting proceeded so well. All voters were given clear directions once they reached the voting stand.

To ensure the accuracy of voting numbers, all voters had their hands marked with a cross once they had cast their secret ballot.

The first vote was cast by Ms Jamie White who appeared pleased but composed during the morning's proceedings.

Due to the high turn out on the day by enthusiastic voters, election organizers had to open a second voting booth. This wise decision enabled all voters to have cast their ballot in good time before lunch.



Election officers guide first-time voters.

There was, unfortunately, one incident of violence at the election site. Although at first it appeared to be a scuffle between disagreeing voters, the disruption was found to be due to restlessness amongst those who had already cast their vote and were impatiently waiting to hear the outcome of the day. No injuries were reported.



Disruption breaks out between voters as they await election results.

The election organisers reported that they were delighted with the turn-out on voting day. They were also surprised and very pleased to note that there were no spoiled votes. This, they claim, indicates that this new generation of voters in South Africa is well-informed and has a strong sense of responsibility.



Voters celebrate as the African Fish Eagle is announced "Winner of the Election".

The voters also appeared satisfied with the way the election process had unfolded. Due to the secrecy of the voting procedure and the counting and re-counting of the votes, even those who had not cast their vote in favour of the Fish Eagle had to admit that the election had been free and fair.



In a careful counting session, the honesty of the election was made public.

The election organisers now hold hopes that these Grade Four voters will be able to apply these skills of democracy and honest voting as they become active members of their society!

APPENDIX U: WETLAND SCENARIO

The Scenario: The Thandamanzi Wetland is found in some beautiful green, rolling hills in KwaZulu Natal. Many animals, plants and people live in or around the Thandamanzi Wetland, but not all appreciate its beauty or importance.

Thandamanzi Wetland is in a bad way! Many years ago, the area was just like a healthy wetland should be. It was muddy, squishy and squashy. It slowed down the gushing river water and protected the communities downstream from flooding during times of heavy rain. The wetland also acted like a big, watery cleaning department, soaking up unwanted chemicals and pollution in the water. Believe it or not, the water flowing out of the Thandamanzi Wetland was actually cleaner than the water flowing in!

Unfortunately this is no longer the case. Many problems threaten Thandamanzi Wetland.

1. Farmer Sam, who owns the wetland and all the land around it, has started draining the wet soil so that he can plant mielies and other vegetables there. Farmer Sam has dug ditches to carry water away quickly, and he has built a new dam to keep the water where HE wants it. This is important for Farmer Sam in times of drought so that he can water his crops from the dam. Also, Farmer Sam needs to make money to keep his farm going, and he believes that the wetland will make more money if he drains it and plants crops instead.

2. Very close to Thandamanzi Wetland is a small community called KwaMadumbe. Many of the people living here are employed as workers on Farmer Sam's farm. Cattle from KwaMadumbe are allowed to graze in Thandamanzi Wetland, so long as they don't do too much damage with their big, hard hooves. The cattle love grazing here because the grass is so juicy and healthy. The people in the KwaMadumbe community also cut some of the wetland's long grass for weaving onto sleeping mats.

3. The Wattled Crane is a long-legged bird that breeds only in wetlands. For many years this pair of Wattled Crane has laid their eggs and raised their chicks in the Thandamanzi Wetland. They are now awfully worried because the wetland is drying up and they have nowhere to breed! Wattled Cranes are an endangered species which means that there are very few of them left in the world and they have to be carefully looked after or else they may become extinct. Unfortunately, this does not bother Farmer Sam as he believes that his dam and healthy crops are more important.

4. Farmer Piet owns the farm next door to Farmer Sam. Farmer Piet has learned about Wattled Cranes and realises how important it is to protect them. He doesn't have a wetland on his farm but he does notice the effect on his river now that the Thandamanzi Wetland is drying up. Farmer Piet wants Farmer Sam to look after the wetland, not drain it, and the two farmers have many arguments.

5. There is another community living on Farmer Piet's farm. The people of KwaManzi live close to the river, and last year three children and an old man died when the river flooded and swept away their village. Farmer Piet and the people of KwaManzi believe that the wetland would be able to stop this kind of flooding, but they have no control over what Farmer Sam does in his land.

6. Some birds are very happy with the change from wetland to crops! Since Farmer Sam planted his mielies there, they have more tasty food that is SO easy to get. These birds disagree with the Wattled Crane and simply say they should go somewhere else to find a nest.

7. The frogs that used to live in the wetland are suffering too. Not only has their muddy, squishy, squashy home dried up, but there are also many chemicals from Farmer Sam's crops that wash into the river. Some frogs have already died and many others have simply decided not to breed until things improve.

OVER TO YOU! Members of the class can now role-play these characters and act out how they imagine they would interact with one another if they met for a big 'indaba'. After the first session, the teacher probes the situation further by asking challenging questions such as "Who do you think is right?", "What about the human rights of the people living in KwaManzi community?", "What is more important : the crops grown by Farmer Sam to supply our shops, or the endangered Wattled Crane?" Learners then return to their roleplay and try to resolve the issue by taking into consideration everyone's rights as well as environmental responsibility.

APPENDIX V: PLAY SCRIPT USED IN EPWORTH SCHOOL'S HADEDA ISLAND ASSEMBLY.

Scene 1: Meet the Gauteng Bird watchers!

Oh No! There goes my heel. These shoes cost me over R900!

You should have worn sensible bird-watching gear like me.

Where are these Wattled Cranes that I have come all the way from Gauteng to see?

Be patient, Madam. We will find them any minute. I have often seen them here in the Thandamanzi Wetland.

Me too. This is a perfect breeding spot for them. There is a pair of Wattled Cranes that always lay their eggs and raise their chicks here in the Thandamanzi Wetland.

What do their nests look like?

Their nests are large flattened heaps of plant material.

The mosquitoes are biting me!

Here, use this to get rid of them.

Well where are these Wattled Cranes? I'm getting tired of all this bundu bashing!

Quiet, Madam. Wattled Cranes are very timid and you will not see them if you huff and puff so much. You must be patient when you are bird watching. Hlala pansi, Thula – wait quietly.

Scene 2: Baas Sam and the Drainage Ditches!

Hurry up! Keep digging you lazy good-for-nothings!

But Baas Sam, we have already dug so many ditches to drain the water away from Thandamanzi. It is almost bone dry now!

Yes Baas, and you have also built that huge dam so you will have plenty of water during a drought.

Of course, do you think I am stupid? I must plan ahead and have plenty of water for my mielies and vegetables. This whole wetland must be dry by next month so that I have more land to plant more mielies!

But you have so many mielies and vegetables planted already, Baas.

Ja man, but I want to make more money and get even richer so I can buy the latest cars and fanciest cell phone!

Scene 3: Where are the Wattled Cranes?

Good morning Farmer Piet. I have brought these people from Gauteng to see the Wattled Cranes. There are none left in our area to see.

It is so sad. There are so few Wattled Cranes left in the world that they are almost extinct.

This is ridiculous! We have come all this way – we want to see the Wattled Cranes!

I'm afraid that may not be possible, M'am.

Why not?

Some farmers in the area have been draining this wetland so that they have more land where they can plant crops. Now there is very little wetland left for breeding sites for the Wattled Cranes and they are also losing their food supplies. They have moved away from this area. There is only one pair left and they may also leave.

Oh No!

This is terrible!

This can't be true.

Very bad news.

Ag shame!

Scene 4: Birdwatchers and KwaManzi Community Protest!

What are you people doing on my land?

They have come to see the Wattled Cranes. Now you explain to them who is chasing an endangered species away because of their greediness for more money and more land!

Are you trying to pick a fight with me again?

No, I just want to look after the environment and the endangered species in it!

You people must try and understand. I have five children and the good schools cost a lot of money nowadays. I have to have more land so that I can grow more mielies and vegetables to pay for my children. You are all complaining but you still have to buy the food I grow.

But what about the Wattled Cranes – they are already so rare. Our children will never even get to see one if everybody doesn't do their bit to protect them.

Ja, Boss, and we live at KwaManzi on Farmer Piet's farm and last year our homes were flooded and people in our community were killed.

Why are you blaming me for that?

Before you drained the wetland the people of Kwamanzi were safe. When the river flooded the wetland contained the water.

It's true. My grandfather was eighty two and had lived safely at Kwamanzi all his life, but last year the river flooded through our home and he was drowned.

Three young children also lost their lives in the flood.

Scene 5: Concerns from the KwaMadumbe Community

We the people from KwaMadumbe used to weave beautiful sleeping mats with the long grass from this wetland, but the grass is so short now.

Yebo, it is because of Farmer Sam's dam. The wetland is drying up and the grass doesn't grow well anymore.

It is the same for the cattle. The grass is not juicy and healthy anymore. Our cattle are getting thin because the wetland is drying up.

Scene 6: Thandamanzi's pollution concerns!

Do you remember when Thandamanzi was muddy and squishy and squashy just like a healthy wetland should be?

I remember, Gogo (nods head). The wetland soaked up all the chemicals and pollution. The water flowing out of Thandamanzi could have been bottled by Aquella it was so pure.

Now with the wetland all dried up, nobody can drink it.

That's right Gogo. The water is so polluted now.

Scene 7: Seed-eaters and Toads!

But what about us? Nobody is thinking about us. We are happy with the change from Wetland to crops. We are seed-eating birds and since Farmer Sam has planted more mielies we have had lots more tasty food.

The mielies are delicious to eat!

Yes and the food is so easy to get.

We have been able to increase the size of our families. All my cousins and brothers have moved to this area now and we are all one huge, happy seed-eating family!

We have lots of fun flying between the mielies.

All you two legged lot are the same – all you think about are the two legged types in the world. Wattled cranes, humans, seedeaters, you are all the same!

What is your problem, you slimy old toad?

We frogs who used to live in the Wetland are suffering too. Our muddy, squishy, squashy home has dried up and most of the frogs have had to leave or have died. Others, like my daughters have simply decided not to breed, like my daughters, so now I will probably never have any grandchildren!

Yes, me too and I have really been looking forward to being a grandfather to lots of tiny tadpoles!

Well, the thing is you see. We all need to work out a way to live together peacefully and in a fair way. We all have rights but with our rights also come responsibilities.

That's true. Maybe we should all get together for a big 'indaba' to work these problems out.

I have a better idea. Why don't we take you all on an imaginary trip to Hadeda Island to show you how they make decisions about their habitats and environments there?

That's a great idea. They are champions on Hadeda Island. They understand all about rights and responsibilities and work everything out fairly so that everyone is represented.

A Bird's Eye View. Learners should understand what 'an island' is. They should be able to recognise the differences between regions e.g. how do rivers differ from coasts? How do grasslands differ from deserts?

Learners may need to be introduced to the idea of 'a bird's eye view'.



Ensure all learners understand what an 'island' is.

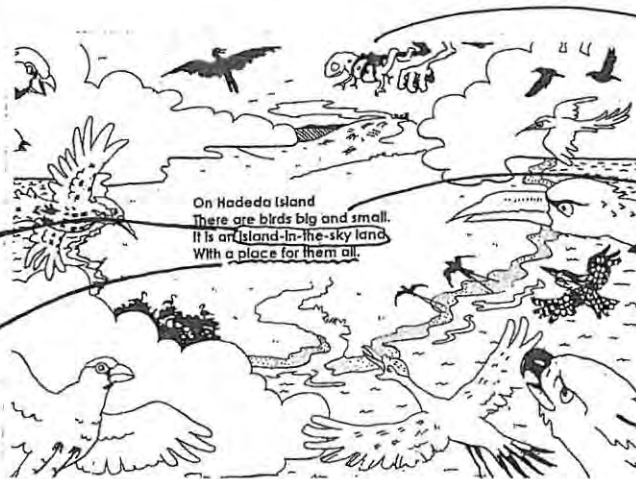
Although each habitat is separate, they are still interconnected. Consider how conditions in one habitat can influence another.

- Vocab
- island
 - habitat
 - vegetation
 - region

Which habitats have members of your class visited or studied?

It's imaginary and real! It is important for learners to recognise that Hadeda Island is imaginary but it might resemble our real world. This shift between real and imaginary should be sustained throughout.

- Vocab
- belonging
 - imaginary
 - different
 - similar



Keep an eye out for this chameleon on subsequent pages.

Consider other comparisons between birds e.g. fast or slow flying. What sort of differences between people?

an imaginary place.

A significant idea: Like the birds on Hadeda Island, all people have a place where they belong.

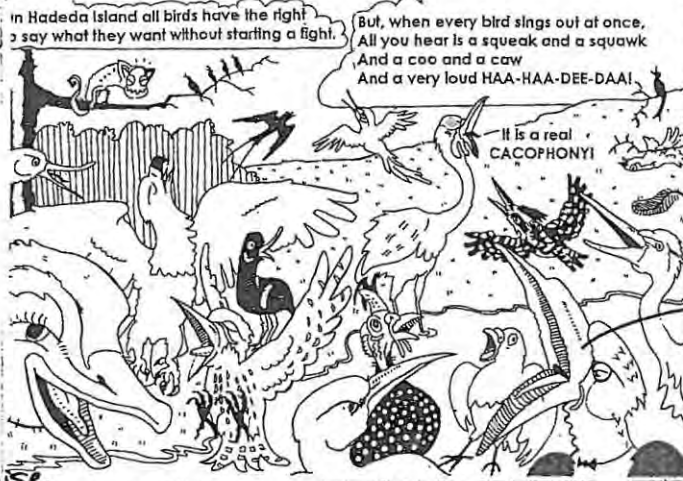
Look at the different beaks and feet of birds. Why are they so different? (See worksheet)

What are some similarities between the imaginary Hadeda Island and our real world?

We can't talk without listening. Learners should come to understand that freedom of speech requires responsible behaviour and listening skills too.

Learners understand 'a cacophony' more easily if they discover it rather than learn a definition. Ask learners to choose and sing out at once and produce a cacophony!

Ask learners to try and recognise bird species.

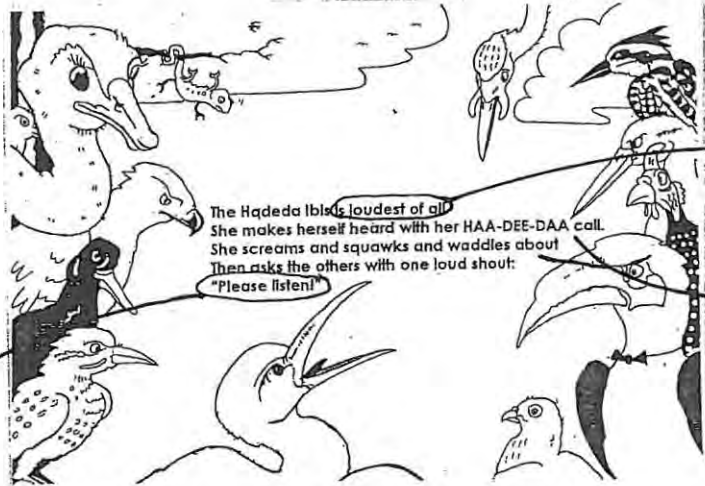


The class can practice reading this aloud. Allocate different sounds to groups in the class and co-ordinate a dramatic reading!

Why are so many beaks stretched wide open?

How does it feel to try and make yourself heard in a cacophony?

What makes a leader? This page can lead to an interesting exploration of leadership. Does the Hadedda have the right to ask the other birds to listen? Is her manner appropriate?



What tone of voice do you think the Hadedda uses here?

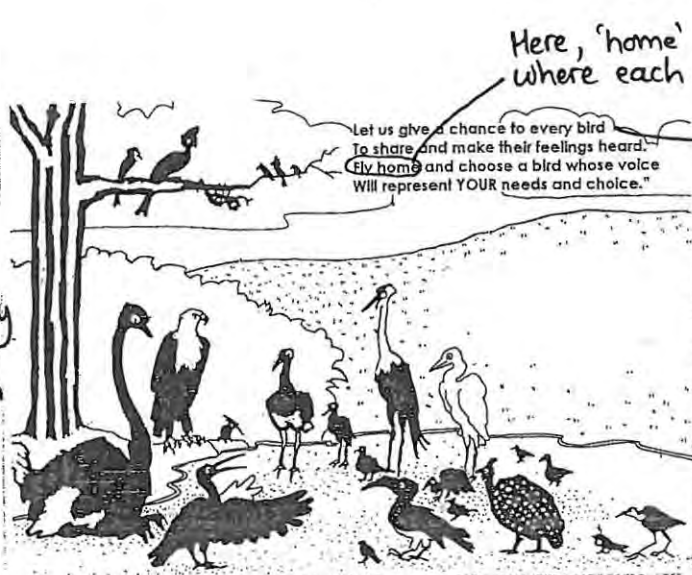
Is the loudest necessarily the best leader?

Learners should enjoy trying to mimic the Hadedda's call and walk.

What do you think the Hadedda is going to say?

One bird, one vote! This page develops the idea of democratic elections and elected representatives.

Note how the illustration shows a sense of community rather than a superior Madeda on a stage. The birds are sharing ideas rather than being bullied by one individual.



Here, 'home' is the habitat where each bird lives.

One bird, one vote!

Vocab

- representative
- community
- democracy

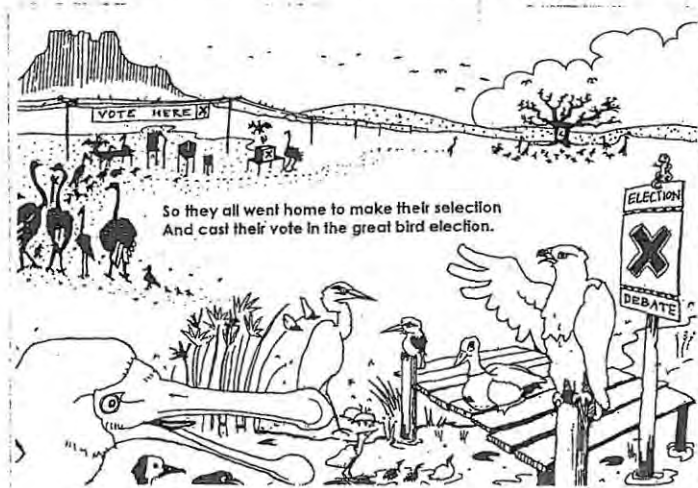
What does it mean to 'represent' a group?

Casting a vote means being heard. This illustration depicts various aspects of an election. Learners should note that there is more to voting than just 'casting a secret ballot'. It also involves debating ideas and thinking carefully about the choices.

Voting is a complex process that should be taken seriously with a sense of responsibility.

Vocab

- secret ballot
- election
- debate
- observers

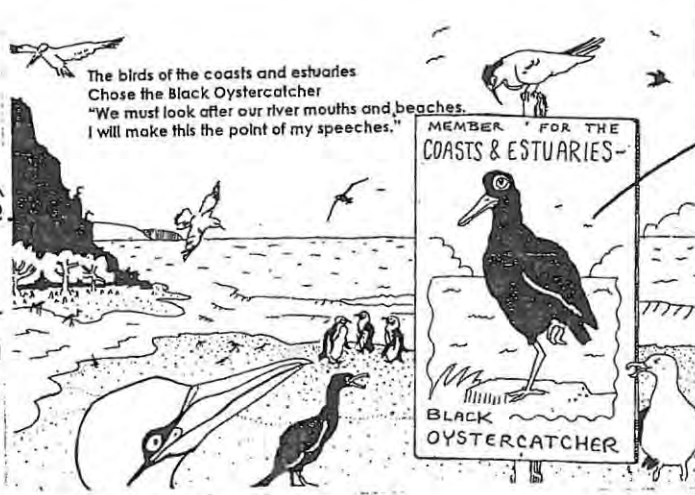


- Draw learners' attention to:
- the voting booth
 - the ballot box
 - the ballot sheet
 - the long voter queue.
 - the public election debate
 - the public mee

What is the purpose of holding a public debate?

Habitats, adaptations and many, many needs. The purpose of these seven pages is to introduce the birds that were voted as representatives of the various habitats. Learners should understand the link between habitats and how birds are adapted to living there. If the habitats are destroyed, the birds' lives are affected.

Each page provides an opportunity to investigate that habitat and its 'elected representative'. Usually, educators choose to study one or two habitats in greater detail. However, learners should at least learn to recognise all the habitats and their elected representatives.



Learners can design the election poster and campaign of one of these birds.

Learners can work in groups to do more detailed studies of particular habitats and species. By reporting back, all groups can benefit from the shared information.

How similar are the problems faced by the birds to the problems we face in our environment?

All birds have the right to a healthy environment. This page introduces many environmental challenges that can lead learners into more in-depth investigations.

This is a very significant page as it opens up the wide range of issues faced by birds and people.



Note this bird's missing leg. How should learners interact with handicapped people?

• Why does education play an important role in responding to these issues?

What is the responsibility of each elected representative?

A class can select one or more of these issues and role-play how each bird character would be affected by it. What would the elected reps of each habitat have to say?

A Parliament of Birds. Just as with people, the birds of Hadedu Island have elected representatives who now have the responsibility to do what is best for that community. Although this is the final page of the Big Book, it should be the beginning of an exciting exploration of local leadership and decision-making for a better environment.



What do you think will happen when all the elected representatives meet in Parliament to discuss their issues?

CLASSROOM ACTIVITY	LEARNING AREA	LEARNING OUTCOME
HOWICK PREPARATORY SCHOOL		
<i>Drawings of Guinea Fowl:</i> Learners had drawn helmeted guinea fowl in coloured pastel; these were displayed on the classroom wall.	Arts and Culture	LO1
<i>Bird Studies:</i> Learners studied birds, focusing on their physical features, adaptations and behaviour.	Natural Sciences	LO1
<i>Habitat Studies:</i> Learners studied various South African habitats, working individually and in groups. One class works in groups to make food webs of selected habitats.	Natural Sciences	LO1
<i>Bird Characters:</i> As a group, learners discuss the different birds as illustrated in the <i>Hadedea Island Big Book</i> , and imagine what type of personalities they have. This leads to discussion about people's characters and behaviour.	Life Orientation	LO3
<i>Canvassing:</i> Building on their habitat studies, some learners role-play birds and describe what they would do for their habitat if elected as leader.	Life Orientation Natural Sciences	LO2 LO1
<i>Voting Procedure:</i> The class learners about elections and how they work. Learners make their own ID books to allow them to cast a vote and then participate in a classroom voting session for the leader of Hadedea Island.	Life Orientation	LO2
<i>Starfish Story:</i> Learners are told the story about stranded starfish being returned to the sea, and relate this to environmental responsibility and action.	Natural Sciences	LO3
<i>Letter Writing:</i> Learners write letters to Nelson Mandela describing five environmental problems and how to respond.	Languages	LO4
NOGQAZA PRIMARY SCHOOL		
<i>Bird naming:</i> Learners name and compile a list of the birds they know from their area.	Natural Sciences	LO1
<i>Habitat naming:</i> Learners are told about some habitats in which birds live.	Natural Sciences	LO1
<i>Bird adaptations:</i> Learners discuss and then complete a worksheet on how birds' beaks and feet are adapted to their habitat and food type. Learners refer to a fieldguide on birds to assist them.	Natural Sciences Languages	LO1 LO3
<i>Bird drawings:</i> Learners sketch various birds in their workbooks to show different types of beaks and feet.	Arts and Culture Natural Sciences	LO1 LO1
<i>Leadership and Respect:</i> Learners briefly discuss the qualities of a good leader and how to behave so that others will respect and like you.	Life Orientation	LO3
<i>Classroom vote:</i> Learners participate in a very brief classroom voting session for a class monitor.	Life Orientation	LO2
<i>Listening and Reading:</i> Learners complete numerous reading tasks, either silent reading, in small groups or as a whole class.	Languages	LO1; LO3

WORKSHOP MATERIAL: YOUR OWN LEARNING PROGRAMME UNIT TEMPLATE (copy for extras)

Grade:	Name of LPU:			
Learning Area	Learning Outcomes	Assessment Standards	Teaching & Assessment Activities	Resources
Duration:				
Looking Back To:				
Looking Forward To:				
Critical & Developmental Outcomes:				
Context:				

APPENDIX X: DEPARTMENT OF EDUCATION LEARNING PROGRAMME UNIT PLANNING TEMPLATE

APPENDIX Y: SUMMARY OF CLASSROOM ACTIVITIES SHOWING WITH WHICH LEARNING AREAS AND LEARNING OUTCOMES THESE CORRESPONDED.




CLASSROOM ACTIVITY	LEARNING AREA	LEARNING OUTCOME
EPWORTH SCHOOL (PHASE TWO) These activities all followed a detailed focus on bird features, behaviour and adaptations, not itemised here. Learners had also studied rights and responsibility in some detail.		
<i>Cover Design:</i> Designed the cover of their own Hadeda Island A4 books, photocopied from the <i>Hadeda Island Big Book</i> . Front cover: a bird's eye view of the island; Back cover: own choice.	Arts and Culture	LO 1
<i>Rules:</i> A worksheet on rules with questions for learners to respond to such as 'Why do we have rules?' and 'Who makes the rules?'	Life Orientation	LO2
<i>Bottletops Game:</i> Learners play a game in two teams with no rules to experience why rules are so necessary.	Life Orientation	LO2
<i>Cacophony Exercise:</i> Learners simultaneously imitate bird sounds to demonstrate a cacophony.	Life Orientation	LO2
<i>Hadeda Island Habitats and Species:</i> Several pages of notes with information on the habitats and the birds found on Hadeda Island.	Natural Sciences	LO1
<i>Slogans, Logos and Election Campaigns:</i> A lesson is spent learning about slogans, how they are used etc. Learners experiment with designing a slogan and logo for their bird's election campaign.	Languages Life Orientation	LO3 LO2
<i>Election Poster making:</i> Learners spend several lessons planning and then producing an election campaign poster for the bird of their choice.	Arts and Culture Life Orientation Languages	LO1; LO2 LO2 LO4
<i>Oral Presentation:</i> The election posters are presented to the rest of the class along with a brief speech as to why this bird should be voted 'Bird of Birds'.	Languages Arts and Culture	LO2 LO4
<i>The Great Bird Election:</i> All learners get the chance to cast their secret ballot in the Great Bird Election.	Life Orientation	LO2
<i>Designing Bird Feeders:</i> Several lessons and homework sessions are spent designing and constructing bird feeders. When these were eventually finished, learners hung them in the school garden and sketched the birds that came to feed at them.	Technology Arts and Culture	LO1; LO3 LO1
<i>Rap Song:</i> In groups, learners developed a rap or song about freedom of speech.	Arts and Culture	LO1; LO3
<i>Wetland Scenario Activity:</i> Learners spent several lessons debating and problem-solving through role-playing in the wetland scenario.	Natural Sciences Social Sciences (Geog.)	LO1; LO3 LO2; LO3
<i>Whole-school Assembly:</i> The whole Grade 4 class put together an assembly on democracy using <i>Hadeda Island</i> as a focus. The assembly involved singing, drama, dancing, and a choral recitation of the text of the <i>Hadeda Island Big Book</i> .	Social Sciences (Geog.) Arts and Culture Languages	LO2; LO3 LO1; LO3; LO4 LO2

APPENDIX Z: TABULATED TEACHER GUIDE DEVELOPED FOR NOGQAZA PRIMARY SCHOOL

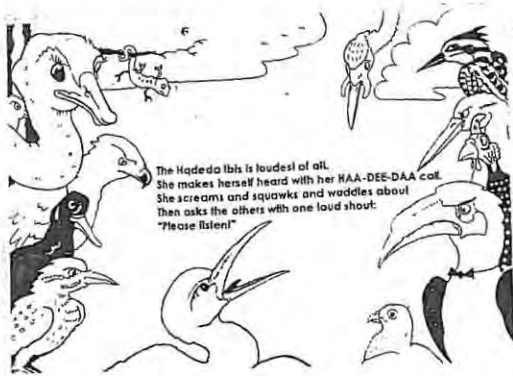
“Hadedda Island”

Learning Area: **Life Orientation**

Learning Outcome: ~ LO2. The learner will be able to demonstrate an **understanding of and commitment to constitutional rights and responsibilities**, and show an understanding of diverse cultures and religions.

Activity Page	Key Idea	Some Start-up Activities & Assessment Ideas
<p>1.</p> 	<p>Many different habitats make up the Island. Similarly, many different communities make up our country.</p>	<p>How many different habitats (places to stay) can the learners find on the Island? Are they able to recognise and name the various areas? Can they imagine who or what might live there?</p>
<p>2.</p> 	<p>We all have a place where we belong.</p>	<p>Read and discuss the Universal Bill of Childrens' Rights. In small groups, learners act out scenes of (i) these rights being <i>abused</i> and (ii) of these rights being used <i>correctly</i>.</p> <p>Second Language learners can memorise one section each and recite it to the class.</p>
<p>3.</p> 	<p>Freedom of speech also requires responsibility and listening skills.</p>	<p>Ask learners to think of what they would do if they had R500. They must not tell their idea until the teacher counts One...Two...Three ...Tell me! Then all learners must shout at once what plan they have for their R500. The result will be noise – a real cacophony! Teacher and learners then discuss what it means to have “freedom of speech” and what responsibilities accompany it.</p>

4.

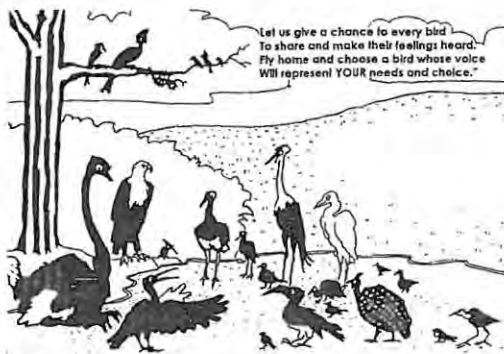


What makes a good leader?

What should leaders do?

1. Learners look closely at the picture and listen carefully to the words. Do they like or dislike the Hadedda? Can they explain why?
2. Give learners a wide selection of words and phrases that can describe leaders. The words must be for good and bad qualities. E.g. talks loudly; bossy; has a big smile; tells the truth; drives a big car; listens to others etc...
Learners choose from this list to finish the sentence: "A good leader is somebody who...."

5.



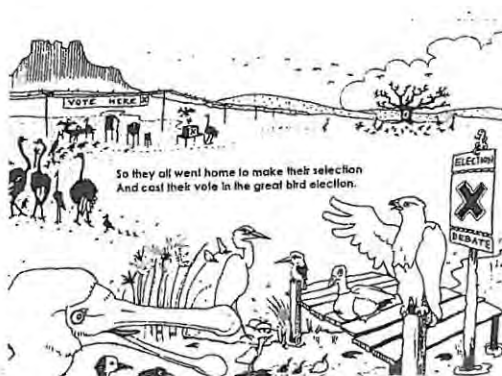
Electing representatives to speak on our behalf.

Learners and teachers work through Activities 1 – 4 on the worksheets provided in the *Hadedda Island Support Pack*.

Assessment Standard:

- Discusses children's rights and responsibilities as stipulated in the South African Constitution.

6.



Casting a vote means being **able to make wise choices** about ourselves in our community.

1. Teach learners the procedure of voting. They can learn new vocabulary: secret ballot, debate, ballot box, election etc.
2. Conduct your own election in your class! Choose something the learners will feel strongly about and then vote on it. Try to get all the details correct e.g. waiting in a queue, registering as a voter, writing on a ballot sheet, casting a secret vote into the ballot box, counting the votes, announcing the winner.

Assessment Standard:

- Learners identify and explain stereotype, discrimination and bias.