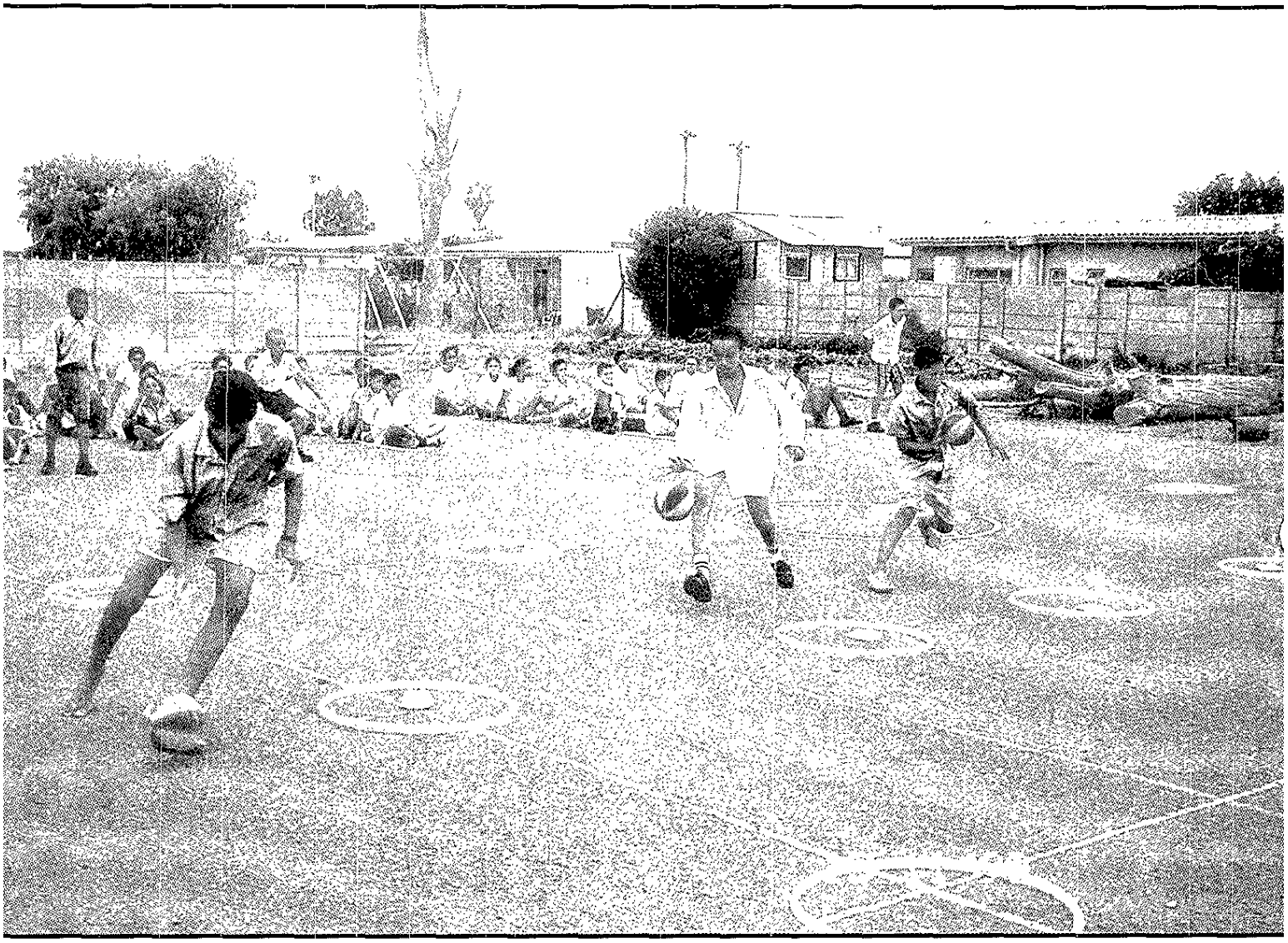
# PROVISION OF LEARNING SUPPORT MATERIALS

# GRADE 7 PILOT PROJECT



EXTERNAL EVALUATION REPORT

WRITTEN BY PENNY VINJEVOLD
AND JENNIFER ROBERTS

DECEMBER 1999

Commissioned by: The Department of Education Private Bag X895 Pretoria 0001
Tel: (012) 312-5911
Fax: (012) 321-6770

Published by: The Joint Education Trust
PO Box 178
Wits 2050
Tel: (011) 403-6401
Fax: (011) 339-7844

ISBN: 0-620-25788-1

# PREFACE

The Grade 7 pilot project forms part of the Department of Education's plans for the phased implementation of Curriculum 2005 in South African schools. When the implementation plan for the new curriculum was drawn up, it was decided that a pilot project would be conducted prior to implementation in the first grade of each phase (foundation, intermediate, senior). The Department of Education felt it especially important to conduct a pilot project for Grade 7 implementation as this was the grade level at which new learning areas were to be introduced.

The aim of the Curriculum 2005 pilot projects is to indicate what support is required by schools in the implementation of the new curriculum and to establish whether existing support mechanisms are adequate or not.

The Grade 7 pilot project provided:

- learning support materials in the form of print materials and equipment
- training for Grade 7 teachers in the pilot schools.

The Royal Netherlands Embassy sponsored the equipment.

The Department of Education commissioned an evaluation of the supply and use of the learning materials and equipment. Penny Vinjevold and Associates were commissioned to undertake this study. This evaluation report is the result of that study.

# Research Team

Team Leader

Penny Vinjevold has a HDE, BEd and MEd from the University of the Witwatersrand. She was a teacher and teacher educator for eighteen years in Johannesburg, Mafikeng and Soweto. She conducted and managed a number of school-based research projects between 1993 and 1999. Her special interest is the use of learning support materials in classrooms.

Project Co-ordinator

Jennifer Roberts has a BA Hons from Rhodes University and an MEd (Educational policy research) from the University of the Witwatersrand. She has lectured in the Department of Linguistics and English Language at Rhodes University and has conducted research on whole school development projects.

Field workers

Ria de Villiers - Free State and Northern Cape

Ria de Villiers was a teacher for 20 years and is currently the Director of the St Andrew's Language Project which teaches English, Afrikaans and Sesotho from preschool to adult levels. She has conducted Outcomes-based Education (OBE) workshops for teachers and teacher educators and has visited the United Kingdom, New Zealand and Australia to observe OBE in action. She holds a BA Hons, HIDE, and MA and is currently registered for a PhD.

Sipho Khuzwayo - KwaZulu Natal

Sipho Khuzwayo has been working in education for 25 years, as teacher, principal and circuit superintendent. He holds a BEd from the University of Natal (Pietermaritzburg) and an MA degree from Boston University.

Gilbert Onwu - Northern Province and Mpumalanga

Professor Onwu has a BSc from the University of London, and an MSc and PhD from the University of East Anglia. He has taught science at school and university level and is currently Head of Science and Mathematics Education at the University of Venda. He has published extensively and written many chemistry textbooks. He has recently received a grant to conduct research on large classes in the Northern Province.

Lizo Qangule - Western and Eastern Cape

Lizo Qangule holds a Bachelor of Social Science degree from the University of Cape Town and has worked as a research assistant on three President's Education Initiative projects in the Western Cape. All of these projects involved classroom-based research.

Mamokgethi Setati - North-West and Gauteng

Mamokgethi Setati was a teacher and is currently a lecturer in Mathematics Education at the University of the Witwatersrand and is registered for a PhD. She holds an MEd in Mathematics Education and conducted a research project on language practices in multilingual Mathematics classrooms for the President's Education Initiative.

# Materials review panel

Beryl Lourens has a BSc and HDE and has been a science teacher and principal for 30 years. She now runs OBE workshops and is involved in materials development and teacher support.

Gezane Mjijwa has a Secondary Teachers' Diploma from the Soweto College of Education. His specialisation subjects were mathematics and science. In 1997 he graduated from the University of the Witwatersrand with a Further Diploma in Education (Maths and Science). The following year he completed a BCom degree at Vista University. He has taught mathematics at Dr Vilakazi High School in Soweto from 1990 to the present and is currently Head of Department: Mathematics.

Jabulani Phelago has a Bachelor of Pedagogics degree and a Senior Secondary Teachers' Diploma from the University of Zululand. He has recently completed a Masters degree in history at the University of Natal (Durban). He has taught at various high schools in KwaZulu-Natal. He is currently Head of Department: Human and Social Sciences at Mariannridge Secondary School. He has co-authored a Grade 12 history guide and contributed to a history textbook for Grade 12.

Barry Porter teaches Technology at Mariannridge Secondary school. He holds a National Technical Certificate (NTC 6) and has worked on the development of the provincial Woodwork syllabus and served on the Woodwork markers selection panel. He has also had experience of working in industry.

Dr Manfred Schroenn has a BEd, MEd and DEd from the University of South Africa. He worked in schools for over 30 years as a teacher, principal and subject adviser. He was Chair of the national syllabus committees for English (12 years) and for speech and drama (5 years). In 1995 he was Chair of the KZN Curriculum/Education Programmes and textbook committees. He currently does consulting work on OBE curriculum development and research projects.

Siza Shongwe has a BA degree. He has taught mathematics at high schools in Soweto and at the Soweto College of Education. He has been involved in AMESA for the last ten years and has been part of a team writing mathematics textbooks for the new curriculum. He is currently Director of Teacher Education in the Gauteng Department of Education.

# TABLE OF CONTENTS

## LIST OF TABLES AND FIGURES

### Tables



### Figures

# LIST OF ABBREVIATIONS

| | |
|---|---|
| AC | Assessment criteria |
| AC(2) | Arts and Culture |
| C2005 | Curriculum 2005 |
| DET | Department of Education and Training |
| DOE | Department of Education |
| ECD | Early Childhood Development |
| EMS | Economic and Management Sciences |
| HSS | Human and Social Sciences |
| HoA | House of Assembly |
| HoD | House of Delegates |
| HoR | House of Representatives |
| ILP | Illustrated Learning Programme |
| LLC | Language, Literacy and Communication |
| LO | Life Orientation |
| LSM | Learning Support Materials |
| MLMMS | Mathematical Literacy, Mathematics and Mathematical Sciences |
| NS | Natural Science |
| OBE | Outcomes Based Education |
| PEI | President's Educational Initiative |
| PI | Performance Indicator |
| PO | Programme Organiser |
| RNE | Royal Netherlands Embassy |
| SADTU | South African Democratic Teachers' Union |
| Tech | Technology |

## Executive Summary

### Purpose of the study

The main purposes of this study are to:

- report on the delivery and use of the learning support materials provided for the Grade 7 Pilot Project for Curriculum 2005
- assess the extent to which the learning support materials assist the implementation of Curriculum 2005
- make recommendations in relation to the development, choice and delivery of learning support materials and the training which should accompany these materials for the implementation of Curriculum 2005 in Grade 7.

### Pilot project description

In preparation for year 2000 implementation, the Department of Education (DOE) piloted the new curriculum in 161 schools in the second half of 1999. The pilot project provided teacher training and learning support materials to all pilot schools during July and August. The materials supplied took the form of:

- print materials: Illustrative Learning Programmes, teacher training manuals and learner handbooks for Grade 7 learners;
- equipment in four learning areas (Technology, Life Orientation, Economic and Management Sciences and Arts and Culture).

The print materials were provided by the DOE and distributed by the provincial departments. The equipment was sponsored by the Royal Netherlands Embassy (RNE) and delivered by Edutrade, a company commissioned to supply and deliver the equipment. The RNE and DOE also commissioned an evaluation of the 'impact and effectiveness of Learner Support Materials over a 3-4 month period'.

### Methodology

In assessing the extent to which the learning support materials assist the implementation of Curriculum 2005, the study examines three stages in the curriculum implementation process:

- the intended curriculum, that is, Curriculum 2005
- the support provided to schools to implement the intended curriculum, that is, the learning support materials and training provided for the pilot project, and
- the implemented curriculum, that is, which learning support materials were used and how they were used in the pilot schools in the third and fourth terms of the 1999 school year.

Data for the study was obtained from:

- key DOE documents on Curriculum 2005 and other reports, papers and articles on Outcomes Based Education and Curriculum 2005

- interviews and meetings with key personnel in the national and provincial departments
- interviews with principals and teachers in 27 pilot schools
- questionnaires submitted by principals and teachers in an additional 74 pilot schools and
- observation of 126 lessons in the 27 schools visited.

A panel of six experts comprising teachers, former teachers, materials developers and textbook writers was appointed to review the print materials and equipment provided to the pilot schools in each learning area.

Findings

This study of the Grade 7 pilot project found that Curriculum 2005 was piloted in Grade 7 classes in the overwhelming majority of 161 pilot schools in the third and fourth terms of 1999. Schools visited and surveyed expressed general enthusiasm for the new curriculum and reported some progress towards the re-structuring of the school day and the re-allocation of human and other resources to accommodate the new curriculum.

The Grade 7 pilot project succeeded in providing teacher training and learning support materials (both print materials and equipment) to all but a handful of pilot schools. All but two of the pilot schools had received the RNE-sponsored equipment by the end of July 1999.

However, the study found low use of the equipment and the print materials provided for the pilot project. A number of reasons are advanced for this low use. The most common are:

- Teachers were unfamiliar with much of the equipment and/or did not know how to use it in activities in the classroom. A large number of teachers in the pilot schools requested training in the use of the equipment.
- The Programme Organisers, chosen by the Grade 7 teachers, did not match those used in the ILPs and learner handbooks. Similarly, the equipment provided did not suit the Programme Organisers chosen.
- The location of the equipment and the procedures for accessing it placed obstacles in the way of teachers using the equipment.
- The learner handbooks contained insufficient content or conceptual information to provide support to the teachers or learners. Teachers and the expert review panel were critical of the lack of content support provided by the learner handbooks, in particular those provided for the new learning areas. The inadequate training provided for the pilot project.

The study found that when learning support materials were used, they were used in 'hands on' investigative activities and in group work. This use of the materials resulted in high levels of learner involvement. However, this involvement seldom led to the development of the higher order conceptual thinking skills or the co-operative teamwork skills promoted by Curriculum 2005.

The main reason for this was that teachers are unclear about what it is they should be teaching in the Grade 7 year. In many cases, the teaching observed consisted of an ad hoc set of activities or lessons which were linked by a Phase Organiser such as water. The study found little evidence of systematic, structured development of knowledge, skills and values.

In addition, the teachers themselves were not always clear on the conceptual goals of the lessons and therefore did not maintain a focus on the concepts to be taught. This can in part be attributed to:

- teachers' lack of content knowledge
- lack of experience in teaching the new learning areas
- teachers' lack of familiarity with activity-based and investigative approaches to learning and
- lack of training in the use of the materials and equipment provided.

In many instances the print materials provided for the Grade 7 pilot project did not support the use of the equipment and the systematic development of knowledge, concepts and skills. In particular, the print materials:

- do not provide the content and conceptual knowledge to support the introduction of new content/concepts especially in the new learning areas

- do not make explicit the conceptual tools and skills required to carry out the tasks or `hands on' activities set for learners

- do not explain how to set up `hands on' activities and do not explain how these achieve the learning goals of the learning programme

- expect learners to apply knowledge which they do not have

- do not provide sequenced learning experiences that build on and consolidate the knowledge, skills and values of previous learning activities

- do not provide exemplars of what activities should be assessed and how they could be assessed.

Recommendations Curriculum structure

The report concludes with a number of recommendations to support the implementation of Curriculum 2005. All these recommendations are underpinned by the study's conclusion that the learning goals of Curriculum 2005 would be promoted by providing teachers and materials developers with detailed guidelines on the curriculum. These guidelines should indicate:

- the minimum concepts and content to be covered in each learning area in each school phase

- the skills that should be taught in each learning area in each school phase assessment exemplars for each learning area in each school phase.

These guidelines should also seek to address the following imbalances which have been observed in teaching and learning practices in Grade 7 classes during the pilot project:

- the dominance of oral work over reading and writing
- the imbalance between group work and individual work
- the imbalance between content and conceptual knowledge in the learning area on the one hand and integration of this knowledge with everyday experience on the other
- the dominance of activity-based as opposed to expository teaching. Support to teachers in implementing the new curriculum Learning Support Materials

It is recommended that all teachers and learners have access to a textbook in each learning area. This textbook should set out the central learning framework for the year. These and other learning support materials provided to teachers should explicitly support the attainment of the Curriculum 2005 learning goals of higher order thinking skills and applied knowledge by:

- distinguishing between the learning programme (textbooks) and supplementary materials which support the learning programme
- making explicit the key concepts, skills and values that will be covered in the learning programme
- providing the minimum content required for the development of the knowledge, skills and values of the learning programme
- providing systematic activities for the consolidation and extension of higher level thinking skills such as collecting and analysing information etc.
- providing exemplars of assessment activities which indicate what learning should be assessed and how this should be done.

This means that materials development should be determined by the key concepts, knowledge, skills and values that need to be systematically taught at the various school phases and not by Phase Organisers.

Training

The DOE and provincial education departments should consider providing systematic and ongoing (three to five years) teacher training and support in the implementation of the new curriculum. It is recommended that the training:

- begin with the overall goals and structures of the new curriculum but be followed by intensive practical workshops in specific learning areas

- be supported by additional information to teachers using a variety of cost-effective methods (e.g. newspaper supplements, newsletters, local workshops)

- include components for school principals on the management of the new curriculum

- include practical demonstrations using the learning support materials provided to teachers.

Provincial trainers indicated that it is preferable to conduct several short workshops rather than one week-long workshop. They also thought that it was preferable to conduct workshops with clusters of schools rather than to train individual schools as

this facilitates peer support and co-operation.

In general it is recommended that teacher training programmes:

- focus on the learning goals of Curriculum 2005 and how these should be achieved promote the use of learning materials which support the systematic development of knowledge, skills and values
- overtly support a balance between group work and individual work, between investigative work and reading and writing expository work etc.
- focus teachers' attention on the key skills and concepts which need to be developed in each learning area in the various school phases
- discourage the use of macro planning which emphasises the use of a single Programme Organiser across all eight learning areas. Not only does this result in boredom for the learners, but it undermines the development of higher order thinking skills in the various learning areas.

The implemented curriculum

School-based management of the curriculum

The following recommendations may be considered in the planning and implementation of Curriculum 2005 at the school level:

- Internal policies and procedures for the management of the receipt and dissemination of learning support materials should be developed in schools. These procedures should ensure that all teachers know what materials have been delivered to the school and that teachers are provided opportunities to familiarise themselves with the materials.
- Schools should develop policies and protocols which facilitate access to and use of learning support materials but which do not compromise the security of these materials.
- Adequate time should be allocated to planning learning programmes and 'hands on' activities prior to the introduction of the new curriculum.
- Schools should develop policies and protocols for learner assessment which can be shared between teachers and with parents and learners.

Classroom implementation of the curriculum

The evaluators recommend that:

- Teachers be guided by the best textbooks available in designing their learning programmes, especially in this initial curriculum implementation phase.
- Teachers increase time spent on planning lessons using the learning support materials provided.
- Teachers include reading and writing tasks in all learning areas at least twice per week.
- Teachers include individual activities in as many lessons as possible.
- Teachers use learning support materials that support the learning goals of Curriculum 2005 but which might not necessarily contain OBE or Curriculum 2005 language.

1. Introduction

The main purposes of this study are to:

- ✍ report on the delivery and use of the learning support materials provided for the Grade 7 pilot project for Curriculum 2005;
- ✍ assess the extent to which the learning support materials assist the implementation of Curriculum 2005; and
- ✍ make recommendations with respect to the development, choice and delivery of learning support materials and the training which should accompany these materials for the national implementation of Curriculum 2005 in Grade 7.

The Department of Education (DOE) plans to implement Curriculum 2005 in Grade 7 classes in the year 2000. Curriculum change always presents challenges but the implementation of Curriculum 2005 at the Grade 7 level poses particular challenges as the curriculum will consist of eight new learning areas. Some of these will essentially be combinations of subjects in the existing curriculum but four will cover fields which will be new for most South African teachers:

- ✍ Technology
- ✍ Arts and Culture
- ✍ Economic and Management Sciences
- ✍ Life Orientation.

In preparation for year 2000 implementation, the DOE piloted the new curriculum in 161 schools in the second half of 1999. The pilot project provided teacher training and learning support materials to all pilot schools during July and August. The materials supplied took the form of:

- ✍ print materials: Illustrative Learning Programmes, teacher training manuals and learner handbooks for Grade 7 learners;

- ✍ equipment in four learning areas (Life Orientation, Economic and Management Sciences, Arts and Culture, Technology).

The print materials were provided by the DOE and distributed by the provincial departments. The equipment was sponsored by the Royal Netherlands Embassy (RNE) and delivered by Edutrade, a company commissioned by the DOE to supply and deliver the equipment. The RNE and DOE also commissioned an evaluation of the 'impact and effectiveness of Learner Support Materials over a 3 - 4 month period'. This report therefore focuses on the delivery and use of materials within the pilot project.

In particular the evaluation report seeks to answer the following questions:

- ✍ What was the nature and quantity of the learning support materials that were to be delivered to the pilot schools as part of the pilot project?

- ✍ Were the print materials and equipment delivered to the pilot schools, and if so, when were the materials delivered?

- Do the materials supplied support the goals of Curriculum 2005?
- Do the print materials in the form of Illustrative Learning Programmes and learners' handbooks conform to the DOE's guidelines for the development of learning support materials?
- Does the equipment provided meet the specifications of the contract?
- Did the pilot project provide sufficient support to teachers in the use of the print materials and the equipment?
- What was the extent and nature of the use of the learning support materials in Grade 7 classrooms?
- Did the learning support materials assist teachers in teaching the new learning areas?
- Did the learning support materials promote learner knowledge, skills and values in the new learning areas?
- What are the implications of the use of the learning support materials in the pilot project for
    - the Grade 7 curriculum?
    - the development of learning support materials?
    - the procurement and management of learning support materials? • teacher development?

The report begins with a brief description of the pilot project, particularly of the training and learning support materials provided for the pilot project. This is followed by a description of the methodology adopted for the evaluation. The main findings of the study are presented in two sections. The first section critically reviews the learning support materials provided in the pilot project. The second section examines when the materials were delivered, which materials were used and how they were used in the classroom. The report ends with a summary of the main findings and recommendations for future support for Curriculum 2005.

## 2. Project description

### 2.1 Project inception and aim

The Grade 7 pilot project forms part of the DOE's plans for the phased implementation of Curriculum 2005 in South African schools. When the implementation plan for the new curriculum was drawn up, it was decided that a pilot project would be conducted prior to the implementation of the new curriculum in the first grade of each phase (foundation, intermediate, senior). The Grade One pilot project was conducted in 1997 prior to implementation in 1998. The DOE felt it especially important to conduct a pilot project for Grade 7 implementation as this was the grade level at which new learning areas were to be introduced.

The aims of the Curriculum 2005 pilot projects are to indicate what support is required by schools in the implementation of the new curriculum and to establish whether existing support mechanisms are adequate or not.

The pilot project provided:

- learning support materials in the form of print materials and equipment
- training for Grade 7 teachers in the pilot schools.

## 2.2 Learning support materials

### 2.2.1 Print materials

The DOE intended that schools should be provided with the following print materials:

- Illustrative Learning Programmes (1 - 5 per learning area depending on the number of Grade 7 teachers teaching the learning area)
- Sufficient learner handbooks for all Grade 7 learners in 6 learning areas (not for Life Orientation and Arts and Culture)
- Teacher training manuals (one per learning area)
- 30 promotional copies of textbooks per learning area (240 books in total).

The Illustrative Learning Programmes (ILPs) and learner handbooks were developed by national learning area co-ordinators in conjunction with provincial learning area co-ordinators. When compiling these documents, the writers referred to a common set of specific outcomes and indicated where teachers could link activities in one learning area to specific outcomes in another. These documents were developed in 1998 and did not make reference to the equipment provided as part of the pilot project.

The DOE calculated the number of ILPs and learner handbooks to be printed on the basis of information provided by provincial departments. The DOE distributed these print materials to provincial Departments of Education which in turn were responsible for distributing them to pilot schools. In some provinces, these materials were distributed at the training sessions, whereas in others they were delivered directly to the schools prior to the commencement of the pilot project.

The delivery of promotional copies of textbooks was undertaken by a publisher, Maskew Miller Longman, who delivered these books directly to schools. The publishers provided 30 copies of each textbook, regardless of the number of Grade 7 learners.

### 2.2.2 Equipment

The provision of equipment in the Grade 7 Curriculum 2005 pilot project emanated from a bilateral agreement between the South African and Netherlands Governments. In terms of this agreement the Royal Netherlands Embassy (RNE) made a grant available for the supply and delivery of a 'set list of equipment items, together with a teacher's guide, to schools throughout the country, to support learning and teaching' in the following learning areas:

- Life Orientation

- Economic and Management Sciences

- Arts and Culture and Technology.

These learning areas were selected as they represented three new learning areas and one (Arts and Culture) which had previously not been accessible to most South African learners.

Selection of Equipment

The DOE, in conjunction with provincial representatives, was responsible for identifying the items to be included in the list of equipment. Heads of provincial departments were requested to nominate one person per province to participate in the equipment selection process.

After the first meeting of the committee, provincial representatives were requested to draw up a list of possible items for inclusion in the equipment pack, based on the perceived needs in schools. The provincial co-ordinator met with provincial Learning Area Committees (LACs) or representatives from these committees who then submitted suggested lists of equipment. The provinces were not given a set of criteria on which to base their submissions. In some cases this meant that very high cost items were included in their submissions. The Free State Education Department reported that they had considered Specific Outcomes, Assessment Criteria and possible activities in the teaching of the learning areas when drawing up their list of equipment. Most provincial representatives reported that the submissions made by Technology LACs were based on a report of the Technology 2005 working group.

A second consultative meeting of the selection committee was held at which the different submissions were discussed and the list of items to be included in the equipment package was finalised. This process was guided by the following principles:

- The DOE would aim to supply as much equipment to as many schools as possible. It was therefore necessary to focus on the supply of basic, rather than very sophisticated or costly items (e.g overhead projectors or video machines).

- All schools would receive a uniform set of equipment, as it would be too difficult to ascertain the needs of individual schools.

- Schools would be provided with both equipment and consumables (e.g. paper, solder for soldering irons, blank cassette tapes etc.).

- Schools which did not have secure storerooms were supplied with steel cabinets for storing the equipment.

In selecting equipment the DOE took cognisance of the fact that not all schools have electricity. However, this was not a criterion for excluding equipment as there are plans to electrify all schools in future.

The selection committee decided that in order to supply more schools with equipment, the cost of the equipment per school would need to be reduced. This

was done by reducing the quantity of items to be supplied to schools rather than by eliminating any items.

Cost of the equipment

The equipment package cost R7839.66 per school. This cost was divided between learning areas as follows:

| | |
|---|---|
| Arts and Culture | R 1601.71 |
| Life Orientation | R 862.23 |
| Economic and Management Sciences | R 742.26 |
| Technology | R 1888.41 |
| Consumables | R 1736.05 |
| Steel cabinet (where necessary) | R 500.00 |

On average, the delivery cost was R 1534.00 per site. The costs quoted above do not include salaries for the additional staff employed for the duration of the contract or a management fee for the delivery company. One can only assume that these costs were built into the costs of delivery and purchasing. The total cost of the supply and delivery to schools was R1 526 283.86.

Selection of equipment supplier

In March 1999 an advertisement calling for tenders for the supply and delivery of equipment to schools was placed in national newspapers. Suppliers were provided with the list of items required by the DOE. The tenders were evaluated using the following criteria:

- Best value for money (quality versus cost)
- Experience in the supply and delivery of equipment
- Track record.

In mid-June, the contract was awarded to Edutrade Africa, a company with experience in the procurement and delivery of equipment to schools. In terms of this contract, Edutrade had to source, pack and deliver the specified equipment to the 161 pilot schools before 31 July and to a further 1444 `needy' schools by the end of October 1999. Deliveries would be made directly to individual schools, except in Gauteng and Mpumalanga where the equipment would be delivered to a central point whereafter deliveries would be made by the provincial Departments of Education. This was done to reduce delivery costs.

Supply of materials

In addition to the DOE's list of equipment, Edutrade included a few additional items, at no extra cost, which they felt would facilitate the use of the equipment (e.g. two 15-amp plugs, electric adaptors and screwdrivers). Each school received 105 items which were packaged into six cartons, weighing 150 kg in total.

Edutrade experienced a number of difficulties in obtaining equipment. For example, at least 30 of the items on the list had to be ordered from overseas suppliers as local suppliers did not have the required quantities in stock. Some of the items which had to be acquired from overseas suppliers included: musical instruments (melodicas, drums, tambourines), iron files,1 multimetres, handtools, torch globes and stopwatches. As the equipment had to be delivered to schools within four weeks of the signing of the contract, suppliers were requested to send sufficient numbers of each item for delivery to the pilot schools by air freight and the remainder for the 'needy' schools by sea. An additional R50 000 was authorised for this expense.

In addition to supplying the equipment, Edutrade also developed a booklet for schools entitled 'Guide for Teachers / Facilitators - Senior Phase' which indicated how the different types of equipment could be used in teaching. The booklet provided an overview of the equipment, recommendations on the storage of equipment and then discussed the rationale for each of the four learning areas for which equipment was provided and possible ways in which the equipment could be used to achieve particular Specific Outcomes.

Edutrade reported difficulties with the storage and packing of the equipment. In view of the volume of equipment to be stored and distributed to schools, the equipment was stored at five warehouses where it was packed into cartons. The items were divided according to learning areas and packed into separate cartons. Each carton was clearly labelled and colour-coded to aid identification. Schools were provided with inventories indicating which items were packed in each box.

Each box had to be packed meticulously in order to fit as much equipment into as few boxes as possible, while still keeping learning areas separate and packing items as safely as possible. The packing teams devised a specific order in which each box had to be packed and its contents checked. This meant that all items had to be available at the time of packing - it was not possible to pack some items while waiting for others to arrive. On average, 100 cartons were packed per day.

Delivery of equipment to schools

In most provinces deliveries were made directly to schools. Each school received a delivery note, which had to be completed in triplicate - one copy remained with the school as proof of delivery, one copy was sent to the DOE and one copy was retained by Edutrade. In those provinces where deliveries were made to central depots, delivery notes for schools were included in the packing cartons.

Edutrade reported the following difficulties when delivering equipment to schools:

• Addresses were incomplete. The suppliers were not provided with accurate or complete addresses for schools. In some instances only a postal address was supplied and in others only the name of the town or area was provided.

• Schools reported that they were not pilot schools. Some schools reported that they were not pilot schools when the trucks arrived with the equipment. This slowed down delivery to those schools which were pilot schools.

- Items were stolen when offloaded at schools. Some of the smaller cartons were stolen when cartons were offloaded from trucks.

- Distance between schools affected rate of delivery. In urban centres, it was possible to make deliveries at 15 schools per day, but in rural areas this figure dropped to three to five deliveries per day.

- Roads were impassable or in poor condition.

2.3 Training

The DOE adopted a cascade training model for the implementation of training in the provinces. In terms of this model, selected provincial officials would be trained and would then be responsible for conducting training in pilot schools (one-tier model) or they would train other officials who would be responsible for providing provincial training (two-tier model). Both approaches were adopted in the implementation of provincial training.

2.3.1 National "training of trainers" workshop

The Teacher Trust, a training consortium under the leadership of Mr M Kibi, was awarded the tender to conduct training for provincial officials. The Trust consisted of representatives from various educational NGOs together with individuals who were experienced in conducting OBE-related training. Most of those participating in the Trust were drawn from the Gauteng region, with a few drawn from the Western Cape and KwaZulu-Natal.

Three national training sessions were held at Aventura, Warmbaths, during March 1999. The first was to prepare the trainers for an intensive week-long training programme to be conducted for Departmental officials and other nominees (e.g. teacher union representatives). This first workshop enabled the trainers to develop and consolidate the training programme, to ensure that all training content was similar and that the trainers 'spoke with one voice'. The Trust felt this was necessary as they had only two weeks to prepare the programme after being awarded the tender.

Two workshops were held for provincial officials. The first was held from 15 to 19 March for officials from the Gauteng Department of Education and was attended by 92 officials and trade union representatives. The second, from 22 to 26 March, was attended by 393 representatives from the other provinces.[2] In total 485 people participated in the 'train the trainer' programme. Some of those who attended the programme were experienced trainers and had conducted training for the Grade 1 Curriculum 2005 pilot project, while others had participated in the development of policy documents.

The key outcome of the workshop, as explained to the trainers, was to develop a national format for Grade 7 Curriculum 2005 training which could be replicated in all

provinces. It was not the objective of this training to develop expertise in the learning areas or to train officials in training methodology.

The five-day training course was structured as follows:
Day One: An introduction to theoretical issues associated with C2005; macro- and micro-planning processes which should be followed by schools.
Day Two: Introduction to the various learning areas and analysis of Specific Outcomes
Day Three / Four: Participants were divided into groups according to learning area specialisation. In these groups they developed examples of learning activities which could form part of a school's activity chart.
Day Five: Assessment.

### 2.3.2 Provincial training

Provincial training took place between April and August 1999. In most provinces, officials who had attended the Warmbaths training course and Departmental personnel trained by these officials conducted the training. In some provinces, all pilot schools attended a single workshop, while in others training workshops were held for smaller groups of schools, organised according to geographic proximity or administrative region. Only in Gauteng were schools trained individually. The length of the training courses differed across the provinces, with the majority lasting between three and five days. Some provinces held a series of workshops for school teachers and principals. Post-training follow-up differed significantly between provinces; some offered weekly on-site support to pilot schools and others did not provide any further support.

## 3. Methodology

### 3.1 Evaluation questions

This study seeks to assess the extent to which the learning support materials provided for the Grade 7 pilot project support the implementation of Curriculum 2005. In particular, the study addresses the following questions:

- What was the nature and quantity of the learning support materials (print materials and equipment) that were to be delivered to the pilot schools as part of the pilot project?

- Were the print materials and equipment delivered to the pilot schools, and if so, when were the materials delivered to schools?

- Do the materials supplied support the goals of Curriculum 2005?

- Do the print materials in the form of Illustrative Learning Programmes and learners' handbooks conform to the DOE's guidelines for the development of learning support materials?

- Does the equipment provided meet the specifications of the contract?
- Did the pilot project provide sufficient support to teachers in the use of the print materials and the equipment?
- What was the extent and nature of the use of the learning support materials in Grade 7 classrooms?
- Did the learning support materials assist teachers in teaching the new learning areas?
- Did the learning support materials promote learner knowledge, skills and values in the new learning areas?
- What are the implications of the use of the learning support materials in the pilot project for
    - the Grade 7 curriculum?
    - the development of learning support materials?
    - the procurement and management of learning support materials?
    - teacher development?

## 3.2 The approach adopted

This study examines three stages in the curriculum implementation procees[3]:

- the intended curriculum; that is, the DOE's curriculum framework, Curriculum 2005

- the support provided to schools to implement the intended curriculum; that is, the learning support materials and training provided in the pilot project and

- the implemented curriculum; that is, which learning support materials were used and how they were used in the pilot schools in the third and fourth terms of the 1999 school year.

A curriculum framework is crucial both to what is taught and to how it is taught. Taylor (1999:107) argues that a curriculum framework 'sets out the intentions of policy makers' and is `the chief instrument for aligning the work of the multiple sets of actors who deliver teaching and learning'. In South Africa the new curriculum takes on an even more significant role given the history of this country and the need to 'transcend the curriculum of the past' (Taylor, 1999: 110), which 'perpetuated race, class, gender and ethnic divisions and ... emphasised separateness, rather than common citizenship and nationhood' (Dept of Education, 1997:1). The new curriculum is directed towards achieving '[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' (ibid). This vision is to be realised through the seven critical outcomes formulated by the South African Qualifications Authority (SAQA) and which are to underpin all curricula (SAQA, 1996).

After considering the intended curriculum the study examines the next two stages in the curriculum implementation process - the pilot project and the implemented curriculum. Through this approach the study considers the various factors (those relating to the pilot project and those relating to schools and teachers) that inhibit and enhance the implementation of the intended curriculum. It is on the basis of this

analysis that recommendations are made for future support for the implementation of Curriculum 2005 in Grade 7.

## 3.3 Stages in the research process Intended curriculum

The researchers consulted various key DOE documents on Curriculum 2005 and other reports, papers and articles on Outcomes-Based Education and Curriculum 2005 (Appendix 1).

Data on the intended curriculum, especially as it applies to the senior phase, was also obtained through interviews and meetings with key personnel in the national and provincial departments. Formal interviews and meetings were conducted with the Acting Director of Education and Training, the pilot project co-ordinator (a Chief Education Specialist in the DOE) and two Chief Education Specialists in the DOE. The pilot project and the extent to which it supports the intended curriculum This section of the study examines the nature and delivery of the learning support materials and the extent to which they support the intended curriculum. Data was gathered through interviews with:

- the co-ordinator of the Grade 7 pilot project
- members of the Curriculum Units in five provinces
- provincial trainers
- employees of the company contracted to supply and deliver equipment
- principals in 27 pilot schools
- teachers in 27 pilot schools, and from
- questionnaires submitted by principals and teachers in an additional 74 pilot schools.

In addition, a panel of seven materials experts comprising teachers, former teachers, materials developers and textbook writers was appointed to review the print materials and equipment provided to the pilot schools. The principles and guidelines provided in the Generic Guidelines for the Development of Learning Support Material for Outcomes Based Education and Training (1998) were used to inform the review. The panel was asked to describe the content of the Illustrative Learning Programmes and to comment on the materials with respect to content, language, layout/presentation, learner activities, assessment and appropriateness for the new South Africa.

### The implemented curriculum

The study examined two key questions pertaining to the implemented curriculum: which of the learning support materials were used and how were they used. Data on the materials used was derived from interviews with teachers in the 27 schools visited, observation of lessons in the 27 schools and, to a lesser extent, the questionnaires submitted by principals and teachers from an additional 74 pilot

schools. The data on the use of the materials was derived from the classroom observations.

In considering how the learning support materials were used the researcher focused on whether the learning support materials were used to promote the key intentions of Curriculum 2005 - the promotion of knowledge, skills and attitudes, the promotion of learner-learner interaction and the promotion of continuous assessment. The observation schedule was also informed by recent South African studies on the use of learning materials in classrooms.

## 3.4 The main sources of data used in the study

Interviews with key personnel involved in the conceptualisation and delivery of the pilot project

Members of the national and provincial departments as well as representatives from the company concerned with the supply and delivery of the materials were interviewed.

Report analysis and literature review

The researchers studied key DOE documents as well as literature on OBE and Curriculum 2005. Appendix 1 lists these documents, papers and books. School visits

A sample of 27 or 15% of the 161 pilot schools was selected for visits for this study. The sample consisted of three schools from each province. The sample schools were chosen to represent schools in different locations (urban, rural, farm) and schools with different resource bases (former education departments).

According to the evaluation proposal submitted by the researcher, data was to be gathered from the 27 schools before the materials were delivered, one month after the materials were delivered and three months after the delivery of the materials. Because the evaluation team was appointed in August after the materials had been delivered and the teacher training completed, it was decided that two visits to each school would be conducted - the first in September before the schools closed for the October break, and the second in late October/early November before the schools began with exams.

On each of the two visits the researchers spent one full day in each school and gathered data on:

- the profile of the school
- plans made for the receipt, distribution and use of the learning support materials
- physical facilities for storing learning materials
- preparation for the pilot project
- teachers' understandings of the new learning areas
- teachers' use of the learning support materials

- existing teaching practices in Grade 7 classes.

This was done by means of:

- a questionnaire completed by principals interviews with principals
- questionnaires completed by Grade 7 teachers
- classroom observations of Grade 7 teachers
- interviews with the teachers
- examination of learner workbooks • interviews with Grade 7 learners.

All 27 schools visited submitted completed questionnaires with details on the school in question. Table 1 shows the number of principal interviews conducted, the number of teacher questionnaires submitted, the number of teacher interviews conducted, and the number of lessons observed during the two visits.

**Table 1 Data collected during school visits**

| | 1st Visit | 2nd Visit |
|---|---|---|
| Principal interviews | 23 | 27 |
| Teacher interviews | * | 125 |
| Teacher questionnaires | 64 | N/A |
| Classroom observations | 64 | 62 |

*Focus groups with three to seven teachers per school

***Survey of pilot schools***

Questionnaires were sent to all pilot schools not visited as part of the research. The first questionnaire was identical to that completed by the principal during the school visits and requested information about the school – number of teachers, learners, facilities, fees, language of instruction etc. The second questionnaire completed by the principal required information on

- plans and preparation for the implementation of Curriculum 2005 in Grade 7 and other grades
- processes and procedures for the receipt, distribution and use of learning support materials
- physical facilities for storing learning materials.

The third questionnaire was directed to Grade 7 teachers. Four copies of the questionnaire were sent to each school. Seventy-four (74) schools returned

questionnaires. All of these submitted school data, 73 principals submitted questionnaires and 255 teachers completed and returned questionnaires.

## 4. Findings of the Grade 7 pilot project 4.1 Schools in the pilot project

### 4.1.1 Characteristics of the schools

Each of the nine provinces nominated between 15 and 20 schools to participate in the Grade 7 pilot project. The total number of pilot schools was 161. Data was collected from nearly two-thirds (101) of these schools - the 27 schools which were visited and 74 schools which returned principal and teacher questionnaires. The majority of pilot schools are former Department of Education and Training (DET) (69) and homeland (31) schools. Thirty-four of the pilot schools are former House of Assembly (HoA) schools, another 22 are former House of Representatives (HoR) schools and five are former House of Delegates (HoD) schools. Tables 2 and 3 show the total number of schools in the Grade 7 pilot project and the number that participated in the study by province and former department.

It was not possible to determine how many of the pilot schools are in urban or rural areas, or were farm schools. In the sample of schools visited almost two-thirds of the schools (17) are situated in urban areas. The five HoA schools are in suburbs, while the other 12 urban schools are in urban townships. Eight of the sample schools are rural schools and two are farm schools.

**Table 2 Pilot schools by province**

| Province | Pilot schools | Survey returns | Visited |
|---|---|---|---|
| Eastern Cape | 15 | 9 | 3 |
| Free State | 20 | 13 | 3 |
| Gauteng | 20 | 9 | 3 |
| KwaZulu-Natal | 17 | 3 | 3 |
| Mpumalanga | 20 | 6 | 3 |
| Northern Province | 20 | 9 | 3 |
| Northern Cape | 19 | 10 | 3 |
| North West | 15 | 8 | 3 |
| Western Cape | 15 | 7 | 3 |
| **TOTAL** | **161** | **74** | **27** |

**Table 3 Pilot schools by former education department**

| Former Department | Pilot schools | Survey returns | Visited |
|---|---|---|---|
| DET | 69 | 24 | 11 |
| Homeland | 31 | 21 | 5 |
| HoA | 34 | 16 | 5 |
| HoR | 22 | 10 | 5 |
| HoD | 5 | 3 | 1 |
| **TOTAL** | **161** | **74** | **27** |

Data gathered from the schools visited and from those that returned questionnaires shows that the pilot project schools vary considerably in school type, staff and learner numbers, resources and fees.

Types of school

Table 4 shows that Grade 7 classes in the pilot schools are located in a wide range of school types. Fifty-two of the 101 pilot schools that participated in the study are primary schools which offer classes from Grade 1 to 7, eight are comprehensive schools4 which have classes from Grade 1 to 12, and the other 40 offer a range of grades often reflecting former homeland and provincial arrangements or the rural nature of the schools5. The significance of this table is that the introduction of a new curriculum at Grade 7 level has different implications for different types of schools.

**Table 4 Pilot schools by grades offered**

| Gr 0 - 7 | Gr 1 - 7 | Gr 1 – 8 | Gr 1 - 9 | Gr 1 - 12 | Gr 0 -12 | Gr 3 - 7 |
|---|---|---|---|---|---|---|
| 2 | 52 | 8 | 6 | 8 | 1 | 1 |
| **Gr 4 - 7** | **Gr 5 - 7** | **Gr 5 - 8** | **Gr 6 - 10** | **Gr 7 - 9** | **Gr 7 - 10** | **Gr 7 - 12** |
| 3 | 1 | 1 | 1 | 6 | 1 | 1 |

Size of schools and Grade 7 classes

The pilot schools which submitted returns accommodated from 72 to 1 535 learners. Eighteen have more than 1 000 learners while nine have fewer than 300. More importantly for this study, the number of Grade 7 learners in the pilot schools ranged from 10 to 336. Although the number of learner handbooks delivered to the schools

was to equal the number of learners, the same equipment was delivered to schools irrespective of the number of learners. This means that schools with small numbers of learners have exactly the same amount of equipment as those with over 300 pupils. The per capita costs of the equipment in this situation ranges from over R700 per learner in small schools

**Table 5 Total number of learners in pilot schools and in Grade 7 classes**

| **Total no. of learners** | **< 300** | **301- 500** | **501-700** | **701-900** | **900-1000** | **> 1000** | **No Data** |
|---|---|---|---|---|---|---|---|
| No of pilot schools | 11 | 16 | 27 | 20 | 6 | 17 | 4 |
| **Total no of Grade 7 learners** | **<20** | **21-40** | **41-80** | **81-100** | **101-200** | **>200** | **No Data** |
| No of pilot schools | 6 | 11 | 25 | 14 | 29 | 10 | 6 |

Learner and teacher profiles

The racial profile of learners has changed over the past five years at most former House of Representatives, House of Delegates and House of Assembly schools involved in the pilot project. Exceptions to this pattern are two House of Assembly schools catering for Afrikaans-speakers and five House of Representatives schools in the Western and Northern Cape where there has been no change at all. At some of the former House of Assembly schools the racial learner profile has changed dramatically - in eight schools more than 60% of learners are Black. In the House of Delegates schools the percentage of African learners ranges from 22% to 40% and in the former House of Representatives schools the percentage of African learners is between 14 and 50% of the total learner population.

The racial profile of teachers at the sample schools has changed very little from that associated with apartheid schooling. Four of the House of Assembly schools have employed one or two Coloured and African teachers and two of the House of Delegates schools have employed a very small number of Coloured and African teachers. One of the DET schools in the Northern Cape has employed two Coloured teachers. Only two pilot schools have seen a significant change in the racial profile of staff; one is a former House of Representatives school in KZN where 25% of teachers are white, Indian or African. At the second school, (a former House of Assembly school in Mpumalanga), 40% of the staff are African.

Facilities

There is great variation in the facilities provided by the schools participating in the

pilot project. Less than half of the 101 schools surveyed have halls (43), libraries (44) and laboratories (41). Seventeen schools do not have staff rooms and another 14 schools do not have storerooms. The number and nature of the staff rooms and storerooms vary across the schools.

Fees

Fees charged vary greatly in the pilot schools from R10 per annum to R3 650 per annum. Sixteen schools charge more than R900. Fourteen of these are former House of Assembly schools, one is a new school built in 1997 with an all African learner population and one is a former House of Representatives school for learners with special needs. More than a third (35) of the pilot schools charge less than R50 per annum.

Classrooms visited

The majority of classrooms in the 27 schools visited had sufficient desks and chairs for learners, useable chalkboards, cupboards, adequate lighting and a table for the teacher. All but two of the schools had electricity in the classrooms. Six pilot schools did not have lock-up cupboards to store learning materials.

4.1.2. General observations in pilot schools

The use of the learning support materials provided for the Grade 7 pilot project is described in detail in section 4.5 below. The following are comments on teaching and learning practices frequently observed in the pilot schools.

Implementation of OBE

All but two of the 27 schools visited were implementing the pilot project. Of those schools surveyed, three schools indicated that they would delay implementation of Curriculum 2005 in Grade 7 until 2000.

In all but two of the schools visited, new timetables covering the eight new learning areas for Grade 7 had been introduced. In most schools, lesson periods were lengthened to an hour or one-and-a-half hours to accommodate enquiry-based learning. In these schools the Grade 7 class operated on a different timetable to the rest of the school, which appeared to cause some problems, especially when teachers taught Grade 7 and other grades. In preparation for the introduction of the pilot project, one school moved all their Grade 7 classes to a separate wing of the school so that their timetable, and the movement between classrooms at different times to the rest of the school, would not disturb other learners.

In all schools, staff members were re-allocated to teach the new learning areas. The reallocation was done in the following ways: on the basis of previous subjects taught (e.g. history and geography teachers became HSS teachers); subjects studied at school or during teacher training; and personal interest or aptitude. Those who had previously taught woodwork, domestic science (needlework) or art generally became the school's technology teachers.

Schools also re-organised and re-allocated existing physical resources. In some schools specific rooms were designated OBE rooms where all OBE-related materials were stored; classrooms were re-allocated so that designated areas would be used for particular learning areas, especially those using specialised equipment. One school decided to stop purchasing traditional desks and instead buy tables with individual chairs as they believed that this furniture was more appropriate to the organisation of the OBE classroom.

Before the pilot project could be implemented a great deal of preparation had to take place. Schools had to develop learning programmes in accordance with the new learning areas. In most cases these programmes were built around common programme organisers and favoured activity-based learning and increased group activities. One school reported that it had used the last three days of the second term for planning, and learners stayed at home during this time so that the teachers could concentrate on their planning. In a small number of schools meetings were held with the parent body to inform them about the pilot project and to provide a short introduction to Curriculum 2005. Parent meetings were also held to explain new forms of assessment.

Teachers' attitudes to being observed

The researchers reported that they were warmly welcomed in most schools and that there was great co-operation from principals and teachers. There were three striking examples of this co-operation. One of the schools which had been informed of the research visit for the pilot project was in fact no longer a pilot school. The provincial department informed the researchers of this on their way to the school. The researchers then asked that an alternative school be suggested. This was done and the principal and teachers were informed of the visit less an hour before the researchers' arrival. They nonetheless welcomed the researchers and allowed observation of lessons. In a second case the principal, who is determined to lead by example, insisted that the researchers observe her teaching before she left for a meeting of principals called by the MEC in her province. At a third school where the pilot project has not yet started the principal did not want teachers to be observed, but the researcher asked for permission to meet the teachers and to ask for volunteers to be observed. Three teachers immediately volunteered. At only one school did a teacher refuse to be observed. The researcher speculated after interviewing the teacher that this was because he felt unsure of his ability in the new learning area of technology. A number of other teachers also showed some anxiety about being observed but nonetheless did not deny the researchers access to their classes. In five cases the researchers suspected that the lessons had been taught before, suggesting that the teachers felt some concern about being observed.

Time wasted

An increasing number of researchers have noted the amount of teaching time lost in South African schools (Peacock, 1995; Schollar, 1999; Reeves and Long, 1999). Reeves and Long report on 11 natural science teachers in nine primary schools in the second term of 1998. The eleven teachers had planned with a science NGO to complete 14 programme activities in the eight weeks of teaching in the term. None of

the teachers managed to complete all 14 activities and on average they covered only eight of the intended activities. The number of Natural Science lessons taught ranged from 17 to 27. Reasons given for missed lessons were: teacher mass action, ad hoc staff meetings, class excursions, teacher ill-health, sporting activities, teachers' personal bereavements and low learner attendance after examinations.

This study of the Grade 7 pilot project found similar reasons for loss of teaching time. In the last week of the third term the researchers found that little to no teaching took place and in the final term the researchers were warned to visit schools before the end of October if they wanted to observe lessons being taught. However, in addition to the teaching time lost through missed lessons the researchers found that valuable time in class was wasted in the following ways:

- placing learners already in groups into other groups

In one lesson a teacher took 15 minutes of a 35-minute lesson numbering learners who were already sitting in groups and getting them to re-arrange themselves into different groups.

- communicating and implementing the procedures for group work

In several lessons the learners could not begin their group work because they did not understand the instructions given by the teacher. In many of these instances the researchers also did not understand what the learners were expected to do and teachers were not able to provide sufficient clarity for work to begin. Other delays were caused by the handing out of learning materials. In some instances time was wasted in the preparation of materials which should have been prepared before the start of the lesson. In one lesson the teacher spent fifteen minutes drawing a diagram on the chalkboard even though the learners had copies of the diagram in front of them.

- group work that is not based on learning materials or clear tasks

The researchers observed a number of lessons in which meaningful work was not possible because of the nature of the task set by the teacher. In these lessons groups of learners were asked to discuss topics of which they had little or no knowledge. In one such instance learners were asked to discuss parallel lines, alternate angles and corresponding angles in groups. Twenty minutes passed in which no progress was made and then learners were asked to report back on their discussions.

- group work report back

In most lessons in which group work was used, all groups were asked to report back on the same topic or questions. This resulted in extensive repetition - all six or seven groups reported much the same content. Not only is this a waste of time but must be seen as a missed opportunity for learning. By asking learners to consider their reports and to report only on things which supplement, are additional to, or which contradict previous groups' report back, teachers would give learners opportunities to practise skills such as analysis, comparison and summary.

- lessons repeated during research visits

In several instances, researchers reported that the lessons which were observed had been taught previously.

Learner workbooks

The researchers found little evidence of extended writing or content notes in learner exercise books. In fact, there was very little in the books at all. In many schools visited in September and October the exercise books contained only five or six exercises. These consisted of lists of words, sometimes in table form. There was also a trend towards pasting pictures cut from magazines and newspapers into exercise books. Another trend in more resourced schools was towards pasting worksheets into exercise books. These worksheets also required little learner writing. In some schools learners keep files for exercises completed in class or at home. Because the pilot project was only just beginning it was difficult to know whether these were to supplement the exercise books or were an alternative to the books. The files contained very little at the time of the fieldwork visits.

## 4.2 Review of materials

The DOE regards the provision of adequate learning support materials as essential for the effective running of an education system, and asserts that these materials are an `integral part of curriculum development' and 'a means of providing both good teaching and learning.' (Generic Guidelines for the Development of Learning Support Material for Outcomes Based Education and Training, 1998)

The DOE has also developed basic principles, which should underlie the development of learning materials. Learning support materials should:

- promote a love of life-long learning
- promote critical thinking, logical reasoning and problem-solving as essential life skills
- promote emotional, intellectual, personal, physical, spiritual, moral and social development, gender appropriateness and sensitivity, an integrated approach to learning and encourage `hands on' experiences
- promote awareness of and respect for the environment and the diverse cultural heritage of society at large
- provide for a continuous progression of opportunities for development, allowing learners opportunities for gradual refinement of perception
- take cognisance of individual differences and promote learner-paced learning
- link content/concepts/knowledge/understanding to skills and to values/dispositions/ attitudes/norms.

In addition to these principles, the DOE provides 10 sets of guidelines for consideration by materials developers under the headings: learner-centred, teacher-friendly, appropriate content, interactive learning experience, appropriate assessment, accessible language, layout / presentation, use of teaching tools and

devices, appropriateness for the new South Africa and feasibility, sustainability and accountability.

There is some overlap between the guidelines provided under the ten headings. For the purposes of this study, the questions were summarised and the review panel was asked to assess the materials on the following criteria: content; learning activities; language/register; layout/presentation; assessment and appropriateness for the new South Africa.

Each of the reviewers looked at the Illustrative Learning Programme (ILP), the learners' handbook and the equipment in combination when assessing the learning materials provided for the Grade 7 Pilot Project. Detailed reports on the materials provided can be obtained from Penny Vinjevold on request.

In general the reviewers were complimentary about the many exciting, relevant and investigative tasks and activities proposed in the learning materials. They also, on the whole, applauded the language and layout of the Grade 7 learning support materials and the attempts made in these materials to assert the democratic values of the new South Africa through promoting understanding of difference and democratic practices. However, there was considerable criticism of the lack of support provided to educators and learners in the content of what is to be taught - knowledge, skills and values - and in the assessment strategies to be adopted. The review panel believes that if learning support materials do not contain these very necessary components, the other positive features of the materials such as language and layout lose their significance.

The specific criticisms relate to:

- the lack of specification of the concepts, skills and values to be learnt
- the lack of systematic coverage of key concepts, skills and values in the learning areas
- the lack of content knowledge provided to support the teaching and learning activities
- tasks that require learners to apply knowledge before they have the necessary knowledge and skills.

These criticisms are dealt with below in some detail, especially in instances where they are consistent with the comments made by teachers in the pilot schools and with teachers' practice in the pilot classrooms.

#### 4.2.1 Content

The lack of specification and systematic coverage of the concepts, skills and values to be learnt

The materials review panel found considerable emphasis in the ILPs on the outcomes to be achieved in terms of knowledge, skills and attitudes. In all the

learning areas the reviewers also found that the content needs of the learning areas as embodied in the Specific Outcomes and Assessment Criteria were comprehensively or adequately covered. For example, Schroenn, the LLC reviewer, reports that the seven LLC SOs are 'superbly covered' by the ILPs and Shongwe's analysis of the MMLMS ILP and learner handbook shows that the activities on Housing and Camping cover all nine MMLMS SOs and all but one AC. See Table 6.

**Table 6 Activities in the MLMMS Handbook by Specific Outcome and Assessment Criteria**

| ACTIVITY | SO & AC Covered | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Housing: Shelter & Basic Need | SO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | AC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Housing: Measurement | SO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | AC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Camping | SO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | AC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Camping | SO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | AC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Camping: Plan & Choice | SO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | AC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Camping: Terrain | SO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | AC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Camping: Equipment | SO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | AC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Camping: Weather Conditions | SO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | AC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Camping: Campsite Activities | SO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | AC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Camping: Tourism | SO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | AC | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |

However, the reports of the review panel indicate that there is inadequate specification and coverage of the key concepts, skills and values to be taught. Shongwe (MMLMS) argues that because the Specific Outcomes (SOs) and Assessment Criteria (ACs) are such broad statements, 'the real test of what the

material covers (the body of necessary knowledge) lies with the specification of key concepts, skills and values'. But these are not specified in the ILP or learner handbook so Shongwe analyses the key concepts, skills and values involved in Activity 1 in the learner handbook in terms of mathematics, applied maths and non-mathematics. Table 7 below shows that there is substantially more focus on non-mathematical issues. Shongwe concludes that if it is the intention of the MMLMS learning area to `achieve the avowed SOs', then the opportunity and emphasis placed on maths and applied maths in these learning materials is insufficient. Mjijwa (MMLMS) agrees and points out that if the key concepts and skills are not explicated it is not possible for the teacher to know whether she has covered the key mathematical tools required by learners to progress in mathematics.

**Table 7 Activity 1 on HOUSING with the determined classification below:**

| | MATHEMATICS | APPLIED MATHS | NON-MATHEMATIC |
|---|---|---|---|
| CONCEPTS | ■ Change over time & space<br>■ Fractions, decimals, percentage, increase, decrease | Development average | ■ Inequality, government, redress and<br>■ Journals, catalogues, newspapers<br>■ Advertisement, data affordability<br>■ Economic growth, development, sustained economic growth |
| **SKILLS** | ■ Calculation of average<br>■ Perform arithmetical operations, order of operation. Calculationof simple increase and decrease | | ■ How to get sources of knowledge<br>■ How to access information |
| VALUES & ATTITUDES | Data | Data | ■ Reasons for types of house etc<br>■ Issues about banking salaries and equality<br>■ Issues about equity redress, affirmative action, land availability |

Schroenn (LLC) is also concerned about the lack of specification of the skills and concepts to be taught. While he welcomes the shift away from 'teaching discrete components of a subject', he is concerned that the learning materials provide no overview of, or emphasis on, the basic LLC skills and knowledge to be taught, practised and developed. He suggests an introduction to the ILP, which provides such specification of the knowledge and skills required in LLC, and argues, in line with Shongwe, that this would give more concrete operationalisation to the broad SOs for LLC. He claims that without such specification it is not possible to know

whether a balanced weighting of time/attention is given to each of the four modes of LLC (speaking, listening, reading and writing).

`The wonderful variety of activities targeting LLC SOs and SOs from other learning areas generates the opportunity to use a wide range of skills but is there enough attention to building competence by progressive practice? Will learners write paragraphs each week, will they practise drafting, editing and rewriting? Will they read every day and will vocabulary and word attack skills be developed systematically?'

Phalago has the same concern about the HSS material. He claims for example that the mapping skills required for conceptual and skills development in HSS are not made explicit, nor are they systematically and comprehensively covered in the learning support materials. He argues that because mapping skills are not explicated, they are covered in an ad hoc way and do not include all the mapping skills required to undertake the tasks set out in the learner handbook.

Like Schroenn, Lourens (Natural Science) suggests that some introductory information on the basic scientific skills (observation, investigation, hypothesizing, interpretation, application) should be included in the ILP. The scientific skills of collecting, recording and using data, investigation, interpretation, classification and application are, in her view, well covered and emphasized in the learning activities. However, the important skills of hypothesizing and predicting are never mentioned. Although the learners have to observe in all the experiments in the learners' handbook, the skill of observation is never mentioned. There is also very little emphasis given to recording of learning. Most of the activities involve only oral work. Learners do not get practice in recording in writing, in mind maps or through labelled sketches. Lourens would like to see a section on ways of recording which gives learners an opportunity to apply what they have learnt by making their own notes, observations etc.

The problem of the lack of specification of the concepts, skills and values to be taught is compounded by the great emphasis in the learning materials on integration. Shongwe's assessment of the MLMMS learning materials claims that the emphasis on integration has meant that the non-mathematical tasks have grown 'like a tumour' and as a result 'the body of knowledge that defines mathematics is obscured or dominated by the non-mathematical considerations'. If teachers see and use this as an example of good practice it will result in the provision of 'insufficient mathematical tools necessary for future use in more complex activities - within and outside pure mathematics.' Schroenn has a similar concern with the LLC learning materials. Sometimes, he finds that the achievement of a variety of SOS from other learning areas is afforded higher priority than the achievement of the skills of communicative competence. He argues that the purpose of integrating LLC with other learning areas is 'to give learners the opportunity to apply and develop their communicative skills, to reinforce and refine them for real purposes and to enrich language awareness', not to obscure them altogether.

Lourens claims that the Natural Science ILP avoids this pitfall because in addition to specifying the SOs, Assessment Criteria and Performance Indicators, it also sets out the main purpose of the activity as well as the additional purposes. This, Lourens suggests, will ensure that the educator is focused on those outcomes which the learning activities are designed to achieve. 'It should also ensure that the Natural Science subject skills are not weakened or lost in the integrating process'.

The lack of content knowledge provided to support the teaching and learning activities

Another common concern of the review panel is that the learning support materials do not provide, or provide insufficient, content to teach the necessary concepts, skills and values. This is a particular problem in new learning areas where teachers have little content knowledge. Ironically, in three of the four new learning areas (Technology, Economic and Management Sciences and Life Orientation), the least content support is provided by the Grade 7 learner support materials. In the Technology materials Porter found that the ILP encouraged teachers to plan a series of case studies under various activities but the activities are not stated. This means that the teacher has to develop her own activities and conduct research into these activities. Porter sees this as problematic in a new and complex learning area, especially as the learner handbook provides no guidance to the teacher, does not contain the same Phase Organisers as the ILP (there is little or no relation between the two materials) and covers only one activity - namely making a package, which involves measuring, cutting and decorating.

A similar lack of support is provided in the Life Orientation materials. Learners are expected to develop a balanced diet but no content information is provided. Similarly, little assistance is provided to the LO teacher in the Phase Organiser `human rights'. The ILP is unhelpful: `To use this Phase Organiser teachers will need training and capacity building in human rights education focusing on content, style and approach - legal concepts, history of human rights, and human rights .....'

Even in the other more established learning areas little content material is provided to support the development of teachers' content knowledge. Lourens (Natural Science) found that 'most of the programme organisers are dependent on educators having the necessary background knowledge to guide learners and facilitate effective and meaningful classroom discussion.' No background information is provided for the programme organiser in 'Disease' and `Exploring the Weather' either in the ILP or in the learner handbook. She argues that many educators are not science specialists and do not have access to the required information, and so they will not be able to teach this effectively. The Reeves and Long (1998) study of Grade 7 science teachers found evidence that even teachers who had substantial NGO support did not have the content knowledge to teach science at this grade level.

Learner materials include tasks that require learners to apply knowledge before they have the required knowledge and skills

The reviewers of the Grade 7 pilot project learning support materials claim that the absence of content in these materials inhibits the ability of the teacher and learners

to undertake the investigative activities which dominate the learning materials provided. The reviewers were positive about the activities and topics chosen and concur with Lourens that they `contain many good ideas for investigative and relevant learning experiences and should interest Grade 7 learners'. However, as Phelago points out, the activities are not supported by a very important aspect of learning, that is, content.

The reviewers agree that the notes and content support are very limited, both for the educators in the ILP and for the learner in the learner handbooks. The materials therefore take for granted teachers' background knowledge and ability to facilitate investigative learning. There are a large number of examples of this across the learning areas. In LO learners have to prepare a balanced diet for one week with no preparatory work. Such an activity should be the application of other learning experiences. As Lourens points out before learners can do this they need to learn about the food groups, what constitutes a balanced diet etc. Learners cannot apply knowledge they do not possess.

The review panel's comments on the learning activities, language, layout, assessment and appropriateness for the new South Africa are summarised below.

### 4.2.2 Learning Activities

The reviewers found that the learning support materials encouraged the exclusive use of group work. They recommend that educators should also be encouraged to include activities which require learners to work in pairs or on their own.

Linked to the emphasis on group work was the dominance of oral work. Each of the reviewers noted the emphasis on oral work, especially through group discussion but also through role-plays, drama, etc. There is also considerable emphasis on developing posters in groups. Very few activities encourage reading and even fewer require any kind of writing.

### 4.2.3 Language / register

In general the reviewers found the vocabulary and sentence construction in the learner handbooks and ILPs appropriate and user-friendly although there was a concern that insufficient attention had been paid to the fact that the learner handbooks would be used by second language and foreign language users of English. Schroenn found the LLC learner handbook a useful model for vocabulary enrichment with key words translated to facilitate code switching.

### 4.2.4 Layout I presentation

All the reviewers found the tables used to present the ILPs clear and systematic. The headings and consistent presentation of concepts, skills and values made the tables easy to read. The bullets and numbering systems were also used consistently and aided reading of the ILP. The layout of the ILPs was also systematic in identifying the SOs and ACs to be achieved for each stage.

However, all the reviewers proposed the addition of an introduction and a table of contents to facilitate navigation of the learning and teaching material. A number of reviewers also suggested the inclusion of an overview of the values, skills and conceptual knowledge to be taught. Graphical representation or spider diagrams were also suggested as aids in improving the readability of the ILPs.

Some reviewers felt that guidance should be provided on integrating the ILP and the learners' handbook. The learner handbooks are also generally well laid out but some of the resources and activities have no headings, titles or introduction.

4.2.5 Assessment

The reviewers felt that the learning support materials provided insufficient guidance on assessment. Because teachers are expected to use new strategies of and approaches to assessment there should be some emphasis on this in the learning support materials. In most instances the materials provide lists of different types of assessment or different assessment strategies but with no explanations or exemplars. Teachers need more systematic guidance on which activities they can use for assessment and how to do this.

The Technology ILP provides an example of this type of guidance. It lists the various skills to be developed and assessed and also provides guidance on assessment by suggesting certain evidence of skills that learners should display during and after completion of the activity.

4.2.6 Appropriate for new South Africa

Most reviewers found that the learning materials (with the exception of the LLC ILP and learner handbook and the MLMMS learner handbook) do not overtly promote tolerance of difference and democratic practices. Schroenn (LLC) notes the recognition in the materials of diverse cultures and the valuing of oral traditions and story-telling, democracy, human rights, gender and racial equity.

Shongwe (MLMMS) reports that democratic practices are `pursued robustly' in the learning materials. However, he warns this pursuit should not `override the essence or nature of the discipline under study.' The resulting inadequacy of the learners within the mathematical discipline in comparison to their international peers is in itself 'very undemocratic'.

All the reviewers were concerned that many tasks set (especially the investigative activities required for these tasks) favour those who live in resourced communities. Lourens (NS) suggests that alternative suggestions be made for activities which would be suitable for teachers and learners in rural and under-resourced areas. The reviewers also thought that the materials should provide more advice for teachers on how to deal with issues such as racism, equitable distribution of resources and other sensitive issues.

## 4.3 Delivery of Learning Support Materials to schools

### 4.3.1 Delivery of equipment

Delivery of equipment

The equipment provided for the pilot project was sourced, packaged and delivered directly to schools in seven provinces by Edutrade Africa, the company contracted to supply and deliver the equipment. In Mpumalanga and Gauteng, Edutrade was requested by the DOE to make deliveries to a central point. Thereafter, regional offices were responsible for delivering the equipment to schools. All schools were asked to sign delivery notes to indicate receipt of delivery - one copy was retained by the school, another sent to the DOE by the delivery agents and the final copy retained by the delivery agents.

All but two of the 101 schools participating in the study reported that they had received all the equipment before the end of the third term 1999.

All pilot schools were supplied with exactly the same equipment and no adjustment was made for differing numbers of Grade 7 learners or for the possession of existing equipment. In Gauteng and Mpumalanga officials indicated that they had intended to examine the equipment and to ensure that it was distributed according to schools' needs. This did not take place as planned and all schools received a standard package regardless of their needs or existing resource base.

Timing of delivery

Edutrade was awarded the contract to supply and deliver equipment to schools in June 1999. One of the terms of the contract was that all pilot schools should receive the equipment by the end of July 1999. This allowed a little over five weeks to obtain, pack and deliver the equipment to all pilot schools in nine provinces. In some cases long distances had to be covered between delivery points.

Deliveries began in the middle of July and were completed by 31 July 1999. Both the schools visited and those surveyed reported that they had received the materials during the third term. The DOE indicated to schools that the pilot project should start on 1 August in all provinces. The material was therefore delivered just before the start of the pilot project.

Figure 1 illustrates the timeframe for delivery of equipment, delivery of printed materials and when provincial training for Grade 7 teachers took place.

The sequencing of the delivery of training, equipment and printed materials varied considerably from province to province. For example, in the Eastern Cape schools received the equipment before attending any training while in the Western Cape schools received the equipment several months after attending the training. In most cases the planning of learning programmes took place after the intensive training and

prior to the start of the pilot in August. This meant that the equipment arrived after the planning of learning programmes for the third term had taken place.

**Figure 1 Project timeframes**

| 1998 | 1999 February | March | May | June | July | | August |
|---|---|---|---|---|---|---|---|
| | First | Term | Second | Term | Holiday | Third | Term |
| ILP and Learner handbooks developed | | | | | | | |
| | | Training of DOE officials | | | | | |
| | | Materials selection committee meets | List of equipment finalised | Edutrade contracted to supply equipment | 31 July equipment deliveries completed | | |
| | | | | Gauteng, N Cape– printed LSM delivered | | NW, FS, WC, Mpum, N Prov printed LSM delivered | EC, KZN Printed LSM delivered |
| | | | | | | | 1. Pilot starts |
| | NW 1st training session | | W. Cape training N Cape training | Gauteng training KZN training | Free State training NW training (2) | NP training Mpumalanga training | E Cape training |

Storage of equipment

The primary factors influencing the storage of the pilot project equipment were reported to be security of the location and ease of accessibility for teachers. In the schools surveyed, 35% reported that the equipment was kept in a storeroom. In other schools, the equipment was stored in all the Grade 7 classes (18%), a library or resource room (14%), a Grade 7 classroom (11 %), the principal's office (11 %), the staff room (7%) and an HOD office (4%). In most schools these are rooms which have some form of security, either a security door or burglar bars.

In the schools visited the most common places of storage were:

- the principal's office or a strongroom or safe attached to the principal's office
- storerooms, some of which are attached to Grade 7 classes.

In three schools the equipment was stored in the old woodwork centre and in two schools in the library. At one school it was kept at a teacher's house as there are no storage facilities at the school. In two schools the equipment was stored in residential buildings on the school property (an unused house near a farm school and a caretaker's cottage). In one school a special OBE resource room had been created and the pilot project equipment was housed in this room. Finally, at one school the equipment was kept in the print room, the only secure room in the school.

In some cases these rooms were not very large, which meant that the equipment had not been unpacked from the boxes. After the second round of visits 11 of the schools had unpacked the equipment and stored it in a cupboard or on shelves, while in another 11 schools only some of the equipment had been unpacked. In four, the equipment had not been removed from the boxes, but they had been opened and the equipment was being used by teachers.

Ninety-two percent of schools surveyed reported that they had checked the equipment on receipt. About half of these said they had either created a new inventory for the equipment or had added it to the school's existing inventory. The overwhelming majority (94%) of schools reported that they had instituted procedures for managing the use of materials. These procedures include teachers signing for equipment, using a roster according to the timetable, or teachers submitting a formal request to use the materials. In some schools the equipment is stored in teachers' classrooms according to learning area. While this facilitates ease of access and use by the relevant teacher, it also limits the use of the equipment by teachers of other learning areas.

Although the booklet produced by Edutrade, which explained how the equipment could be used and linked to the attainment of Specific Outcomes, was included in the boxes of equipment, schools appeared to be unfamiliar with it. This could be explained either because not all schools had systematically unpacked the equipment or because one individual was responsible for storing and unpacking and had not informed teachers about the book. No teacher or principal mentioned the book or its usefulness during interviews.

4.3.2 Delivery of printed materials

4.3.3 Process of delivery

The learner handbooks and Illustrative Learning Programmes were printed by the DOE and then distributed to provincial departments of education. Most provincial departments reported having received these materials at the end of the second term (June 1999). Provinces adopted similar processes for the distribution of the printed materials. Provincial head offices counted the materials and allocated them to district offices on the basis of staff and learner numbers at the pilot schools. Regional offices were then responsible for delivering these materials to schools. The actual mechanism used for delivery varied from province to province.

In the Western Cape a courier firm was contracted to deliver the print materials to pilot schools. In some provinces, Illustrative Learning Programmes were distributed during the training workshops, which were held during the second term. In the Northern Province and Free State trainers were responsible for distributing materials to schools during regional training workshops. In the North-West Province, the materials were sorted and bundled according to the number of learners at each pilot school and departmental support teams were responsible for distribution to schools

during site visits. In most provinces schools were required to sign delivery notes on receipt of the materials.

Most provinces reported that the distribution process proceeded smoothly. However, the Eastern Cape department did not receive learner handbooks in two learning areas. They also reported an oversupply of teachers' manuals in some learning areas.

Timing of delivery

Table 8 indicates when schools in the various provinces received the pilot project print materials.

**Table 8 Delivery of print materials by province**

| During training and planning period | | After start of pilot |
|---|---|---|
| **June** | **July** | **August** |
| Gauteng | North-West | Eastern Cape |
| Northern Cape | Mpumalanga | KwaZulu-Natal |
| | Free State | |
| | Western Cape | |
| | Northern Province | |

In most cases, delivery of the learning support materials took place after the training workshops. In two of the nine provinces delivery took place after the start of the pilot project. The relative late delivery of materials may account for the patterns of usage described in section 4.4.

Interviews with teachers indicated that in some schools there was poor internal management of the receipt and dissemination of the materials and this resulted in delays in the materials reaching the relevant teachers. For example, teachers reported that they were not informed of the delivery of materials, that books were not distributed to teachers or that the materials were stored without being unpacked. This problem typically arose where LSM management protocols were not in place. Quantities of materials supplied to schools

During the researchers' visits to schools it became clear that teachers were often unclear as to which materials they had received. They could sometimes recall receiving the materials only after being shown a sample copy of the book. In some instances teachers did not distinguish between the learner handbooks provided by

the DOE and promotional copies of textbooks received from publishers. This confusion may affect the reliability of data provided by schools surveyed.

All the schools which submitted questionnaires or which were visited as part of the study indicated that they had received some learning support materials, either in the form of learner handbooks, Illustrative Learning Programmes or Training Manuals. The DOE had intended to supply each learner with a handbook in six Learning Areas. No handbooks were produced for Life Orientation and only a teachers' guide was produced for Arts and Culture. Very few schools reported having received sufficient learner handbooks in all learning areas. In some schools the undersupply of materials was so severe that teachers were not able to allocate one book per learner during lessons. Four schools reported that they had not received any learner handbooks.

Only 32% of respondents received ILPs for all eight Learning Areas. The distribution of Teachers' Manuals appears to have taken place more successfully. Schools often reported an oversupply of Teacher Manuals in Arts and Culture. The book produced for this learning area resembles that produced for learners in other learning areas.

There were no patterns to the over- and undersupply of learning support materials. It was only in Life Orientation and Arts and Culture that schools consistently reported that materials were under-supplied.

## 4.4 Use of equipment and print materials

The discussion of the use of the materials is divided into descriptions of what was observed during lesson observations, what schools visited reported using and which materials schools found particularly useful or difficult to use. These descriptions are followed by an analysis of the patterns of use.

### 4.4.1 Use of equipment in lessons observed

The majority of lessons observed did not make use of the equipment provided by the RNE. Items of equipment were used in only 36 (29%) of the 126 lessons observed. Items of stationery (pens, glue, cardboard, paper) were used in 15 of these lessons. In the other 21 lessons, more specialised equipment was used. Table 9 illustrates which equipment was used in lessons observed, by learning area.

**Table 9 Use of equipment provided by the RNE in lessons observed**

| | |
|---|---|
| Arts and Culture | Scissors, glue<br>Tape recorder and cassettes (x4)<br>Paint<br>Modelling clay<br>Poster illustrating musical instruments<br>Melodica |
| Economic and Management Sciences<br><br>Life Orientation | Crayons, Pens<br>Calculators<br>Play money (South African denominations)<br><br>A3 paper, scissors (x3), glue, crayons, paper<br>Cassette Recorder (x2) |
| Technology | Cardboard sheets, paper glue, paper, poster card, pens, scissors<br>Saws, knives, files, nails, pliers, hacksaw, rods, sandpaper, vice grip<br>Bulbs, cells, buzzers, cell holders, bulb holders, wire, switches<br>Thread, embroidery cotton, calico, needles<br>Hotplate |
| Language Literacy and Communication | A4 paper |
| MLMMS | A3 paper, scissors, glue, pens<br>Calculators<br>Bathroom scale<br>Measuring containers<br>Monopoly<br>Cassette player |
| Natural Science | Pens, scissors, glue, paper |
| Human and Social Sciences | Glue, A3 paper |

In general there was an increase in the use of the equipment between the researchers' first round of school visits (late September) and their second round of visits (mid- to late October). In the teaching of Technology there was a significant increase in the number of teachers using the equipment. Not only were more

teachers using the equipment, but there was a shift in the nature of the items being used. During the first round of visits, only one school was using the saws and knives provided, while others were using only stationery. During the second round of visits five schools were using equipment provided specifically for technology (two schools used the equipment to create circuit boards, one used the hotplate and two made use of woodwork tools).

There was little change in the use of equipment for Life Orientation lessons.

In Economic and Management Sciences, only one school used the specialised equipment provided for this Learning Area. One teacher was observed using calculators and play money (second set of visits).

There was an increase in the number of schools using equipment specifically related to the teaching of Arts and Culture. During the first round of visits only one school was using the modelling clay. During the second round of visits two schools used the modelling clay, one used the Arts and Culture poster, another used the paint provided and one used the melodica. In another school, learners used the calico, embroidery cotton and needles provided to make small embroidered squares.

The increased use of the equipment between the first and second field visits can mainly be attributed to teachers' increased familiarity with the equipment. At the time of the first visits, teachers had had little over a month to familiarise themselves with the equipment. One teacher commented, 'No-one told teachers what is in the storeroom'. Another said `I thought the materials were only for Technology'. In schools which had not unpacked the equipment fully or in which there had been no effort to inform all Grade 7 teachers about the nature of the equipment, teachers were not clear about what had been provided. In one school, a teacher indicated to the researcher that they needed equipment which was provided by the pilot project. A general lack of awareness of the availability of the equipment and the procedures governing their usage was evident as teachers from the same school gave contradictory reports on the places used to store the equipment and the procedures to be followed when they were used.

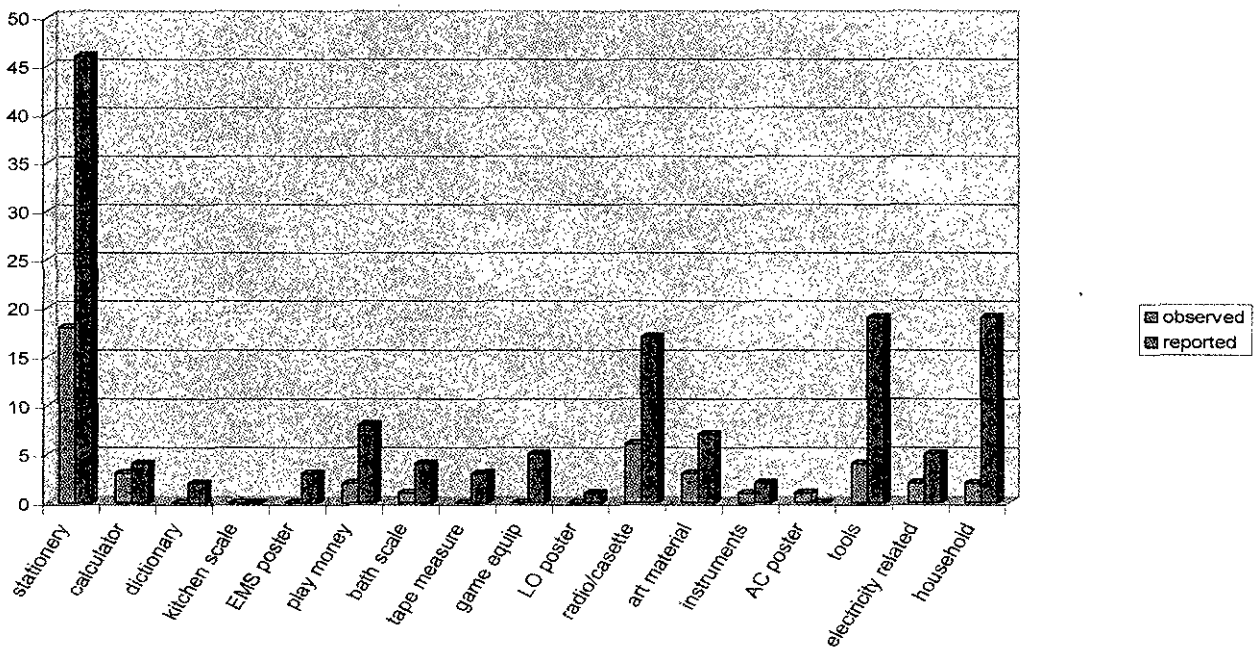
It is possible that the researchers' visits heightened awareness of the equipment in schools. In the first set of visits the researchers' interview schedule alerted teachers to the pilot project equipment for the first time. Some teachers did not appear to be aware of what equipment had been provided nor were they aware that the equipment could be used to teach all learning areas.

### Reported use

Teachers in schools visited were also asked to report what equipment they had used since the inception of the pilot project, that is, in lessons not observed. The following table compares reported and observed use of the equipment.

There were similarities between the reported and observed use of the equipment. The materials with which teachers were familiar - stationery, household items,

**Figure 2 Use of materials, observed and reported, by schools visited**




cassette player - were used most frequently. Learning Area-specific materials (the EMS and AC posters, economic dictionary and Technology tools) were reported to have been used more frequently than was observed. This may be because teachers used them when teaching specific sections of work (e.g. electricity).

Teachers' comments on the equipment

In general teachers were positive about the equipment provided for the pilot project. In particular, under-resourced schools were grateful for any materials or equipment which could be used to improve the quality of learning experiences offered to learners. Teachers indicated that the provision of the equipment had resulted in the following:

Promotion of 'hands-on' learning activities

Teachers reported that the equipment promoted 'hands-on' learning activities. One teacher remarked that if it had not been for the equipment received, not all learners would have had the opportunity to 'press a calculator button'.

Increased learner enjoyment

Learners found the experiential learning activities enjoyable and exciting.

Opportunities for extension work

Some teachers used the equipment provided to develop extension activities for learners who had completed the set work before the rest of the class.

Increased teacher creativity

Teachers also reported that the provision of the equipment stimulated them to develop new learning activities which utilised the equipment.

Extra-curricular use of equipment

Some schools indicated that some equipment was used for activities outside normal school hours. In one case a school indicated that the sports equipment and stop-watches were used to improve their sports training. In another school the Monopoly set was used to keep learners occupied after school.

A few teachers made the following criticisms of the equipment:

Insufficient number of items provided

The most common complaint was that too few items had been provided. Some schools reported that they had had to supplement the equipment. This problem was exacerbated when teachers had to teach 'hands-on' subjects to large classes. Even when classes were divided into groups, there was seldom sufficient equipment for more than one learner per group. As indicated in the project description, the DOE reported that it had decided to reduce the number of items to ensure that the total cost of the equipment package did not exceed the budgeted amount.

Equipment was cheap or of poor quality

This comment was made particularly with regard to equipment supplied for the teaching of Technology. Several schools indicated that they felt that the equipment was not of a sufficiently high standard. One teacher said that he was afraid that the equipment would not `stand up to the robust use of the learners'. The following items were singled out for criticism: files, utility knife and bench vices. Several schools reported that the radio / cassette player was faulty and did not work.

Teachers were asked to indicate which items they had found most useful and which were most difficult to use.

They indicated that the following items were very useful in their teaching (listed in order of usefulness from highest to lowest) stationery, games, cassette player, tools and electrical equipment, household items, calculators, posters and musical instruments.

Teachers indicated that they found the following items most difficult to use (listed in order of difficulty from highest to lowest): tools and electrical equipment, art materials, games, musical instruments and household items. Some teachers indicated that they had been unable to use certain items as they did not have electricity in their schools. However this limitation would have affected the use of only five items.[8]

Explanations for patterns of use

Teachers gave the following explanations for the patterns of equipment use described above:

- Unfamiliarity with equipment and concerns about safety

Table 9 and Figure 2 show that in the majority of instances, teachers used equipment

with which they were familiar (e.g. stationery, household items, cassette player, basic tools) and tended to avoid the more specialised items provided for Technology. Teachers indicated that they were unfamiliar with the equipment, and teachers at one school said that they were 'scared of making blunders'. Even teachers at fairly well-resourced schools said that they 'find the materials confusing'. Some teachers indicated that they were afraid of using some potentially dangerous items with learners.

• Lack of training in the use of the equipment

Many teachers indicated that they were unfamiliar with some of the items provided and reported that they were not planning to use them until they had received training in their use. The provincial training programmes did not make any reference either to the printed materials or to the equipment to be supplied to schools. In some cases provincial training preceded the finalisation of the list of equipment. Eighteen percent (18%) of teachers surveyed indicated that they desired training in the use of the equipment.

• Programme organiser does not facilitate use of materials

Many teachers said that they were not using the equipment as they were not relevant to their programme organisers. This could, in part, be attributed to the fact that the equipment was delivered only two weeks before the pilot project began. By this time, teachers had planned their learning programmes which were to begin in August. By the time of the researchers' first visits a significant percentage of schools had not unpacked or examined the equipment carefully.

• No connection between the learner handbook and equipment

Some teachers reported that because there was no connection between the activities in the learner handbook and the equipment supplied this had limited their use of the equipment.

• Difficulties in accessing the equipment

As security is a concern in most schools, the equipment was stored in a secure place and procedures were introduced to control access to it. While this is necessary, in some schools the procedures were so cumbersome that they discouraged teachers from using the equipment. In schools in which access to the storeroom was controlled by a single person, teachers could not gain access to the equipment if the person responsible was not available. In two schools, the researchers could not gain access to the materials as the staff member with the keys was not present that day.

• Equipment used only in the teaching of new learning areas

Although the DOE intended that the equipment be used in the teaching of all learning areas, some schools limited its use to teachers teaching the four new learning areas. The equipment was packed in boxes marked Technology, EMS, AC and LO. This could have led to a misconception that the equipment could not be used to teach other learning areas.

• Teachers had not read the book supplied by Edutrade on different uses of the materials.

Most indicated that they had either not seen or had not read it. This could be explained by the fact that some schools had not fully unpacked the boxes of equipment and might therefore not have been aware of the book. In addition, not all teachers were aware that the equipment had been delivered to the school.

4.4.2 Use of printed materials in lessons observed

Observed and reported use

Teachers reported that they had used the Illustrative Learning Programmes to `get direction' and to plan their lessons. Some teachers indicated that they had used the ILPs to gain ideas and had then gone on to develop their lessons. They had found the Teachers' Manuals and Illustrative Learning Programmes to be useful.

The learner handbook was used in only 13 (10%) of the 126 lessons observd9. While the use of materials increased between the researchers' first and second visits, the use of the printed materials decreased from ten instances to three. Teachers reported that they had used the learner handbooks in all the Learning Areas for which they were provided. The LLC handbook was used most frequently (7 instances). Teachers reported that they had found the learner handbooks difficult to use.

On the whole this represents a low level of use of the printed materials. The following are possible explanations:

- Present resources influence usage patterns

Schools which were well-resourced before the start of the pilot project favoured existing textbooks. Schools which did not have textbooks tended to make more use of the print materials provided by the pilot project.

- Late delivery of materials had a negative impact on usage

The late delivery of printed materials meant that Learning Programmes were developed without reference to the materials. Many teachers reported that they were not using the materials as they did not correspond with their selected programme organisers. The learner handbooks did not share a common programme organiser, making it more difficult to use all books evenly across learning areas given the emphasis in the training on a single programme organiser for all learning areas.

- Lack of training

Several teachers commented that they were waiting for training in the use of the learning support materials and had therefore not started using them.

- Learner handbooks produced only in English

Several teachers reported that they were not using the learner handbooks as they were available only in English. Teachers teaching LLC in languages other than English complained that they had not received any materials for the pilot project and had had to translate the English learner handbook. In these instances, teachers either had to photocopy translated sections of the handbook or had to lead learners through the exercises, translating verbally.

Teachers' comments about the printed materials

Teachers commented extensively on the printed learning support materials (ie. Illustrative Learning Programmes, learner handbooks, promotional copies of textbooks). The comments made by teachers should be read in conjunction with the comments and recommendations made by the expert panel of reviewers (section 4.2).

On the whole, teachers were critical of the learner handbooks which had been provided by the pilot project. It is significant that teachers from all types of schools, urban and rural, under-resourced and well resourced, made very similar comments. A common criticism, across learning areas, was that the books were 'superficial', 'needed meat' and contained 'insufficient information'. In general there was a demand for greater content coverage.

Teachers complained that the learning support materials were printed only in English. Afrikaans medium schools reported that they had had to translate all materials and this was time-consuming. In the Northern Province two schools refused to continue participating in the pilot project when the materials were delivered in English. LLC teachers also complained that there was a learner handbook for English and not for other languages.

The following comments were made about print materials in various Learning Areas:

- Arts and Culture

Teachers requested more information on music.

- Economic and Management Sciences

Several teachers commented that the handbook was superficial, lacked content and merely provided a framework. Schools complained that it was difficult for the learners to use and that the terms contained in it were 'new'. One Gauteng school reported that they had used it only 'because they were required to do so'.

- Human and Social Sciences

Teachers commented that the 'language was well below learners' ability levels' and that they were 'not happy about the content level'.

- Language, Learning and Communication

One school reported that they were not using the handbook as it was 'disorganised' and 'confusing'. Several teachers felt that the learner handbook was 'vague' and that more instructions should have been given on how to use the exercises. A teacher

remarked that the ILP and handbook do not link to one another and there is 'no sequence to what you are teaching'. Schools with a high proportion of English First Language speakers felt that the language level was not 'up to standard'.

✍ MLMMS

Teachers were critical of this learner handbook, saying that it contained insufficient information, was vague and that there was no consolidation of concepts. Schools also commented that they felt that the material was too easy for Grade 7 learners. One school gave away its allotted handbooks, as it did not plan to use them and preferred to use textbooks. Other teachers reported that the learners were bored with the activities.

✍ Natural Science

Teachers were more positive about the LSM for this Learning Area than any other. However, some felt that it 'needed to be expanded' and had to be supplemented with a textbook. Some concern was expressed about the recommended use of dangerous chemicals in the classroom (section dealing with Acids and Bases).

4.4.3 Use of the promotional copies of textbooks

Many teachers said that they used promotional copies of textbooks far more regularly than the DOE-supplied learner handbooks. Generally, these textbooks provided more content-related information than the handbooks; and teachers, especially when teaching new and unfamiliar Learning Areas, indicated a need for more in-depth content coverage. Some teachers complained that the promotional copies were incomplete and that the sections included in the promotional copies did not match their selected programme organiser.

The majority of teachers interviewed during the study observed that they and the learners both need good textbooks.

4.5 How the learning support materials were used

4.5.1 Focus of the lesson observation

This study aims to understand whether the learning materials provided for the Grade 7 pilot project contribute to the attainment of Curriculum 2005. The intended curriculum is probably best expressed in the seven critical outcomes which, according to the South African Qualifications Authority (SAQA), are the learning goals which should underpin all curricula (SAQA, 1996). According to these goals learners should

✍ 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 above learning goals informed the collection of data in the Grade 7 pilot project classrooms.

The researchers also took account of recent South African studies on the use of learning materials in developing the data collection instruments. These studies have provided important indicators of the extent and nature of the use of learning support materials in classrooms. They also provide insights into how 'hands on' or supplementary materials such as those provided in the Grade 7 pilot project are used.

In 1998 Reeves and Long developed a classroom observation schedule for a study of Grade 7 Natural Science classes. The teachers observed were involved in implementing an activity-based Natural Science curriculum. This schedule was useful for the present study in that the pilot project emphasised activity-based learning involving the use of learning support materials. The Reeves and Long schedule was adapted to make it appropriate for observation of lessons across all eight learning areas.

The observation schedule focuses on the extent to which the learning support materials promote the following learning goals of Curriculum 2005:

The development of higher order thinking skills, data collection and presentation skills as evidenced by:

- ✍ opportunities provided for learners to develop knowledge / skills / values through the use of the learning materials
- ✍ opportunities provided for learners to practise, consolidate and present what has been learnt though use of the learning materials
- ✍ use of the learning materials to assess learners' knowledge, skills and values.

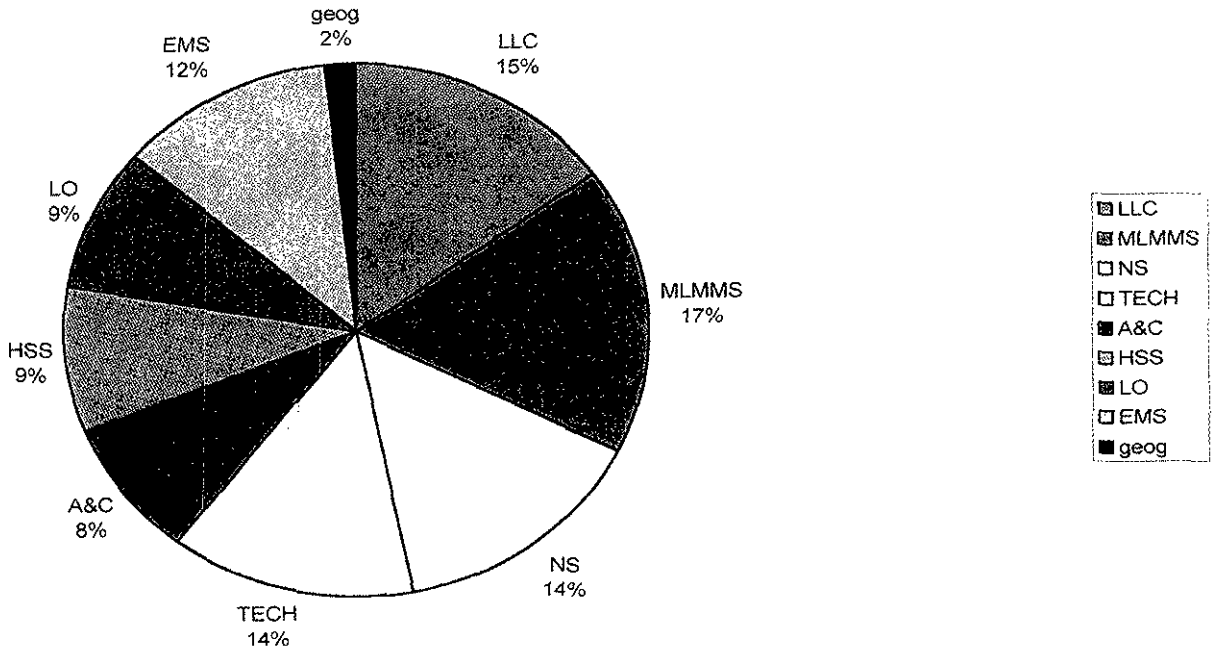
Co-operative learning as evidenced by

- ✍ opportunities provided by the learning materials for learners to work effectively with others as members of a team or group
- ✍ opportunities provided by the learning materials for learners to organise and manage themselves and their activities responsibly and effectively.

4.5.2 Use of learning support materials in lessons observed

The researchers observed 126 lessons in the two sets of visits to schools. A breakdown of lessons observed by learning area is provided in Figure 3.

**Figure 3: Lessons observed by Learning Area (first and second visits)**




Note: Two geography lessons were observed in schools which had not yet implemented the Learning Areas of the new curriculum.

In 90% of the lessons observed, learning support materials (not only those provided by the pilot project) were used. In the vast majority of lessons the learning support materials were used:

- to support `hands on' or investigative activities - in only 5 lessons were extended reading and writing observed
- in group work - in only 27 lessons was individual activity observed.

This section on the use of learning support materials in pilot schools begins with descriptions of two lessons, which will highlight various features.

Lesson 1 - Natural Science

The aim of this Natural Science lesson was to find out whether it is possible to determine the volume of an irregular object by displacing matter (mass). The learning support materials provided to each group were : clay and thread for each learner in the group, a measuring cylinder, syringe and water, a set of worksheets which included questions for group discussion, instructions for group activity and individual activity. In addition learners received worksheets which required them to make notes on the experiment.

The lesson began with a group discussion on the volume of matter and how this can be measured. After the teacher had checked learners' understandings of the concepts involved in the experiment, each learner made a freestyle object and tied the thread to the object. The groups of learners then followed the instructions for the experiment on the worksheet, which included reminders of how to conduct accurate readings. The groups then prepared the equipment for the experiment. Learners poured water into the cylinder and took the reading. Then each group member took turns to lower her object into the water and take the new reading. After each learner had had an opportunity to measure the volume of her object, the individual learners calculated the volume of the object and then labelled a drawing of the apparatus used in the experiment. The group then completed the experiment together once more, but this time completing the experiment notation - aim, apparatus, method, result and conclusion. Although this work was done as a group each learner completed the notation on her worksheet. One group presented their experiment notation to the class and the other groups checked the accuracy of their notes against this.

Lesson 2 - Life Orientation

This Life Orientation lesson aimed to develop learners' understanding of the complexity of family relationships. In previous lessons the teacher had dealt with different types of relationships including family relationships. In this lesson he aimed to explore relationships between teenagers and their parents. The teacher began the lesson with a short group discussion which required learners to think about their relationships with their parents. He then played a Tupac song about a young man who goes to jail. The song describes the disappointment the man causes his mother. In **the song the man expresses** his love for his mother and asks for her forgiveness, but it also emerges that his criminal activities allowed him to pay his mother's rent. The teacher had written the words of the song on the board and told the learners to follow these. He then played the song a second time and asked learners to discuss a set of questions relating to the content of the song. Once the meaning of the words had been clarified in the report-back session, the learners discussed the complexity of the relationship and were asked to relate this to other examples of complex relationships. After a very lively report-back session individual learners had to write a paragraph on what they had learnt from the song/lesson.

Use of the activity or learning support materials to develop learners' knowledge / skills / concepts

Excellent examples of the use of learning support materials in the development of knowledge, skills and values are provided in the two lessons described above. The teachers concerned used the learning materials to develop learners' understandings, skills and values by focusing on the procedural issues (what the learners had to do) and the conceptual goals of the lesson. In other words, they maintained the learners' focus on the conceptual or knowledge goals of the lesson by continually orienting the learners to the goals of the lesson through questions and comments.

In the vast majority of lessons observed the teachers failed to use the learning support materials to develop conceptual or content knowledge or skills. There were a number of different reasons for this.

a) Inadequate pre-lesson preparation of the activity / learner support materials In a small number of cases the teacher did not prepare the material or activity adequately and so learning opportunities were lost. In these cases the learners wasted considerable time waiting for the teacher to prepare the activity or themselves preparing for the activity. For example, in one lesson learners spent over 15 minutes drawing a table to be completed during the lesson activity. In another lesson learners, who were given the task of developing a tree of friendship, spent the entire lesson drawing the tree and its roots. No time was spent on the planned learning experience.

b) Activity/ materials inadequate to achieve the goals of the lesson

In many cases the activities were inappropriate or inadequate to achieve the goals of the lesson. In one Life Orientation lesson the aim was to understand how mankind has developed by examining the money used from the time of Jesus Christ up to the present. The lesson activity was limited to groups of learners finding a silver coin amongst a number of copper coins. The learners completed the task in no time at all. The teacher then asked the groups to hold up their silver coins.

c) Focus on procedural rather than conceptual issues

In a large number of lessons the teacher did not state the lesson objective and focused on the materials themselves and the procedural issues for working with them. In these cases the teacher did not explain why they were using the materials or how the activity/materials would be used to achieve the content or conceptual goals of the lesson. In many of these cases there was great learner activity and obvious enjoyment, but in the end it was difficult to determine what had been learnt. This practice is evident in Lesson 3, the technology lesson described on page 48.

Lesson 3 - Technology lesson

The teacher demonstrated the making of a papier mache plate using a plastic mould. He demonstrated the various processes which had to be followed: how to cut the newspaper into strips, how to paint the strips with glue, how to place Vaseline on the mould to prevent the paper sticking to the plate; and how to lay the strips of newspaper in patterns on the mould. The teacher then told the learners to go back to their work stations where they found newspapers, pots of glue, plastic moulds with numbers on the back so that the papier mache plates would not be mixed up. The learners quickly became involved in the activity - cutting, gluing and pasting. When asked what they were doing all the learners gave procedural answers - 'we are cutting and pasting'. One girl later approached the researcher and explained that they were making a papier mache plate.

In this lesson the `hands on' activity and learning materials were impeccably prepared for the learners. The demonstration was clear and careful, but concentrated entirely on procedural issues. No mention was made of the goals of the lesson or the conceptual issues relating to the mixture that was being made, what this mixture resulted in, what its strength would be and how and why it is used to make a plate. Although the 'hands on' activity was successfully completed, the teacher missed opportunities to use the activity to develop learners' conceptual knowledge and skills.

d) Focus on integration

A number of lessons attempted to promote integration with everyday knowledge. In these lessons the knowledge or conceptual focus of the lesson often became obscured through the focus on integration. This can be seen in the two MLMMS lessons described below.

Lesson 4 MLMMS

The aim of this MLMMS lesson was to examine the crime rate in South Africa and o draw a bar graph showing the frequency of different crimes. The teacher introduced the topic of crime and told learners that they were going to identify different types of illegal activities. In groups, the learners made lists of crimes and these were then written on the board. The groups were then provided with newspapers and told to find articles on crime. The groups then presented these articles to the class. The number of articles on different crimes was recorded on the board. The learners then had to draw a bar graph depicting the frequency of different criminal acts as reported in newspapers. The teacher provided little assistance with this activity beyond saying that the bar graph had to show the type of crime against frequency of occurrence.

This was a well-planned and well-executed lesson. However, many of the learners struggled to construct the bar graph. Systematic recapping of the bar graph construction process would have assisted learners. The teacher clearly had the mathematical skills to teach the concepts and skills required for bar graph construction but the integration with everyday knowledge subverted the focus on the bar graph skills and therefore the activity did not achieve the MLMMS conceptual goals.

### Lesson 5 MLMMS Lesson

The aim of the lesson was to make learners aware of the HIV/AIDS crisis in KwaZulu-Natal. The teacher provided two sets of figures:

- the KwaZulu-Natal population and the number of people living in KwaZulu-Natal with full blown HIV/AIDS
- the KwaZulu Natal population and the number of people who have contracted HIV/AIDS in KwaZulu-Natal

The learners were to work out the percentage of people with HIV-AIDS using calculators. This was the first time most learners had used a calculator and so all the skills required for its use had to be explained from the beginning - from switching on the calculator to the symbols. The learners were then told how to work out the percentage using the calculator.

The goal of this lesson was not achieved as the teacher did not explain the concept percentage. By not explaining this, the learners were left unaware of the extent of HIV/AIDS in KwaZulu-Natal.

But much more importantly the lesson, even in its stated aim, was not geared to the systematic development of the mathematical concepts and skills required for working out percentages. By the end of the lesson the learners knew and practised the procedures for calculating percentage using a calculator but the mathematical concepts and skills required for calculating percentage were not explained or developed in any way.

In summary, the majority of lessons observed which used learning support materials in `hands on' investigative activities missed opportunities to develop learners' knowledge, skills and values. In many cases these lessons would be improved by

- ensuring that the 'hands on' activity supports the learning goals of the lesson
- making clear the aim of the lesson and how the activity will be used to explore the aim
- by focusing not only on procedural issues but maintaining the learners' focus on the conceptual or knowledge goals of the lesson by orienting the learners to the goals of the lesson through questions and comments
- careful preparation of the activity and the necessary learning support materials.

Use of the materials to develop and consolidate learners' knowledge/ concepts/skills

The lessons described above on

- the measurement of the volume of an irregular object through displacement, and
- the complexity of family relationships

provided learners with a number of opportunities to develop and consolidate their understandings of concepts and skills. In the case of the Natural Science lesson, the teacher gave each learner an opportunity to conduct the experiment. The learners' understandings were further consolidated through the teacher's questions to individuals and groups during the experiment, through the completion of the labelled drawing and through the notation of the experiment. In the same way, the lesson on family relationships gave the learners an opportunity to listen to and read the words of a song; to answer comprehension questions; to discuss open-ended questions and to write a paragraph.

Very few of the lessons observed provided learners with an opportunity to express or consolidate the knowledge / skills / values which the learning support materials or activity aimed to develop. In the majority of lessons learners were involved in the procedures of the activity but did not have an opportunity to use the activity or materials to consolidate learning.

This phenomenon was most marked in the Technology lessons. In almost all the Technology lessons observed the activities became ends in themselves and no opportunity was provided to explain the technological processes, that is, for learners to understand and explain what they were doing and why they were doing it. For example, in one lesson learners were making a cardboard cube in which to package sweets. The only instructions given to learners related to procedures of cutting, measuring and folding. Throughout the procedure the learners were silent. They did not ask questions of the teacher nor did they consult or discuss the design with their peers. In other words, the learners were given no opportunity to express their understanding of what they were doing - to discuss the skills of measurement or any other technological activity. Presentation of their cubes through a verbal or written description of the methodology adopted would have provided such an opportunity. In another most enjoyable Technology lesson the learners were to design an object from a plastic two-litre Coke bottle. The learners worked in pairs discussing the design and then developing the object. The teacher's comments and encouragement to learners were not related to the design, or to measuring or to working with plastic. In the presentation of their objects the learners described what the object was to be used for and not the design or making of the object. In other words, the materials or activity were not used to provide learners with an opportunity to express what they had learnt in terms of technology, design or working with plastic.

The 'hands on' activities involving the materials were seldom followed by other opportunities to consolidate learning. Group assignments/experiments/discussions involving learning materials were not followed by consolidation exercises in the form

of note-taking, labelling a diagram, writing a paragraph, completing a comprehension exercise or completing examples of increasing complexity.

An exception to this was an LLC lesson in which the teacher spent some time exploring the various meanings of the word 'rich' through group work and a report back session. In the second part of the lesson she checked learners' understanding of syllables. The class practised a number of examples and then each of the learners wrote a Haiku poem (which is structurally determined by a set number of syllables) on some aspect of being 'rich'. In this way the teacher provided learners with an opportunity to express their understandings of what they had learnt in the lesson. Use of the hands on activity / learning support materials to assess learner progress and understanding

In the lessons described above on the measurement of volume through displacement of water and on the complexity of family relationships, the teachers used the activity to assess learner progress and understanding. They did this by addressing questions to individuals and to groups in order to check their understanding of the activity and the learning goals. Learners' responses were used to address misconceptions and to further develop conceptual understanding and skills.

The majority of teachers observed did not use the investigative or 'hands on' activity to assess learner understanding. Some did not move amongst groups to observe what learners were doing and simply took on a supervisory role which included telling learners how much time they had left for the activity. In a Technology lesson, where learners were expected to design and make a cube which could be used for packaging sweets, the teacher repeatedly explained what the learners had to do, but did not assess what the learners were actually doing. In the class there were learners who had difficulties with measurement and this meant that the dimensions of their cubes were not correct. They were in fact rectangular prisms and the learners did not know why their packages did not match the teacher's sample.

Other teachers observed learners closely in the 'hands on' activity but did not assess learner understanding by asking questions. Sometimes these teachers gave procedural tips or asked questions related to what the learners were doing but not questions related to their understanding of what they were doing. In general teachers did not use learners' correct or incorrect responses or the learning activity/materials to engage learners formatively, that is, to develop or deepen learners' understanding. The most common way of assessing learner progress was through group report-back sessions. But even here the researchers found it was common for teachers to provide no feedback even when answers were clearly incorrect and learners did not understand the activity in which they had been engaged.

In an LLC lesson, which aimed to develop learners' understandings that they were unique and had unique qualities, the learners were required to describe themselves using three character traits. After each presentation the other learners clapped but

the teacher provided no comment on the presentation despite glaring vocabulary and grammar errors and some seriously anti-social behaviour described by the learners. Assessment in the new curriculum is one of the greatest challenges facing teachers. Almost every teacher interviewed or observed expressed doubts about their ability to assess learners according to the new curriculum. Teachers are particularly uncertain of how to assess group and activity-based work.

Despite their concern over the new methods of assessment, teachers are attempting to adopt new assessment strategies, particularly to involve learners in peer and self-assessment. In the majority of cases where these attempts were made they were mismanaged, in that no criteria for peer assessment were provided. In other cases, learners were asked to vote on knowledge and skills. In one lesson learners performed two songs which they had written about the Anglo-Boer war. After each oral presentation the groups shouted out marks and the teacher negotiated with them until consensus was reached. No clear criteria were given for the allocation of marks. Some teachers use assessment rubrics which were obtained at provincial training programmes. It is not always clear whether these rubrics form part of a continuous assessment programme or what criteria were used to assess learner attainment. One teacher used a self-assessment rubric for diagnostic purposes. Learners were asked to indicate what they did not understand after an MLMMS lesson. As no other assessment was conducted, the teacher was dependent on learners' own perceptions of their understanding and abilities.

In general there was very little evidence of

- ✍ assessment aimed at understanding individual learner progress (diagnostic or evaluative)

- ✍ assessment which attempted to understand written/diagrammatic rather than oral understanding of the activity and its conceptual goals.

In all schools visited, teachers expressed concern about the way in which learners would be assessed at the end of the 1999 school year. Some schools indicated that they were waiting for advice from the provincial DOE on how to proceed while others had been told that they were to set exams. Many teachers expressed concern that Grade 7 learners were expected to present a usual report on applying for admission to secondary schools. They were afraid that learners who had participated in the pilot project would be penalised as they would have non-traditional report forms.

One school indicated that it had suspended the pilot project in the fourth term, due to parental anxiety about year-end assessment.

Learner-learner interaction and group work

The classroom-based observation for the pilot project also investigated the extent to which the learning materials supported the goals of Curriculum 2005 by providing opportunities for learners to:

- work effectively with others as members of a team, group, organisation and community

- organise and manage themselves and their activities responsibly and effectively.

In 93 of 126 lessons observed teachers used group or pair work. This did not involve learners simply sitting in groups - groups of learners were expected to engage in tasks set by the teachers. The learners generally appeared familiar with the procedures of group work and the roles and responsibilities of individuals in such work. In most schools the learners moved into group work quickly and efficiently, assigned a scribe and rapporteur and began the activity. To this extent the learners organised and managed themselves and their activities responsibly.

However, the researchers found that the possibilities for working effectively as a group or organising learner activities effectively depended to a large extent on the nature and management of the task set for learners. Generally, in the lessons observed the group tasks did not provide effective opportunities for group learning and co-operation.

Nature of task set for groups

There were two main problems with the nature of the tasks set for group work. In many lessons the group activity was limited to discussing a single question on a topic about which the learners had little knowledge. The learners were not introduced to the topic nor was learning support material provided to structure the discussion. In these situations the content of the group discussions was superficial and can only be described as 'brainstorming' rather than effective group work. The HSS lesson described below illustrates the following

- when learners lack general and specific knowledge to discuss an issue, the opportunities for working together meaningfully decline

- without learning materials the learners can only talk about what they already know and learning opportunities decrease.

In other lessons, teachers provided complex material but did not introduce learners to the concepts needed to work effectively with the material. In a Natural Science lesson learners were given a task which aimed to distinguish between the scientific and everyday meaning of the word 'energy'. Learners were shown an example in their textbooks where there were newspaper headlines which used 'energy' in different ways. The learners were asked to look at newspapers and magazines and find similar examples. Some learners could not find any examples as they had inappropriate material (e.g. television schedules, classified advertisements) and resorted to copying down the scientific meanings from the textbook. After a 90 minute lesson, many had not made much progress, and the opportunity for learners to manage and organise their activity effectively was lost.

In contrast in the LLC lesson described above in which learners each had to write a Haiku poem, groups of learners were actively engaged in helping improve each other's poems by finding words of the correct number of syllables etc. In this instance the learners' existing knowledge and a clearly directed task provided the opportunity for effective learner-learner engagement.

## Lesson 6 Human and Social Science lesson

T he aim of this HSS lesson was for learners to 'know products which we transport to other countries'. Groups of 8 - 12 learners were asked to write down goods which are exported from South Africa to other countries. The group work was extremely efficient - the learners allocated roles (chairperson, scribe), found paper to record the discussion and quickly moved into discussion. No texts or sources of information were provided for this lesson. There was little discussion in the groups as the learners were operating off their everyday understandings of the term 'export' and their existing knowledge of South Africa's exports. The groups each decided on between 3 and 7 different exports, some of them, correct others not. The groups then presented their products to the class with elaborate greetings and pomp and ceremony. The teacher wrote down all the products mentioned by each group and then entered into a class discussion on the products written on the board.

The teacher introduced new words - countries, continents, imports and exports. However, the teacher's misconceptions about South African products led him to confirm and endorse learners' incorrect answers and to overturn learners' correct guesses.

### Management of the task

In several lessons observed, instructions and guidance to groups were vague. In these lessons, the groups spent much of their time guessing or being confused about the process to be followed. The learners were therefore not able to benefit from team work through providing support to one another, mentoring each other and correcting each other's mistakes. Group size had a significant influence on the effectiveness of group work. Where the group size exceeded eight learners, the level of interaction and learning decreased. In one EMS lesson, the teacher divided the class into two groups of 15 - 18 learners. In groups of this size, some learners did not participate and began to be disruptive, and the learners were not able to interact effectively with the material and vied with each other for attention in the group.

### Implications for reading and writing

The fact that most group work is oral has implications for the amount of reading and writing done by learners. Usually only one learner in a group has an opportunity to do any writing - the scribe. After the group task, the learners do not make individual notes on their discussions or class discussion of the topic. This means that there is little opportunity to reflect on the day's lesson or to make notes which can be referred to in future. In only five lessons observed were learners given extended writing tasks for homework.

# 5. Conclusion and recommendations 5.1 Conclusion

## 5.1.1 Introduction of Curriculum 2005 in Grade 7 classes

This study of the Grade 7 pilot project found that Curriculum 2005 was piloted in Grade 7 classes in the overwhelming majority of pilot schools in the third and fourth terms of 1999. Only five schools10 of the 101 schools that participated in the study did not introduce Curriculum 2005 at the Grade 7 level in this period. One school attempted a combination of the old and new curricula by introducing one hour of each of the new learning areas - Life Orientation, Technology, Arts and Culture and Economic and Management Sciences - per week. The other traditional subjects were allocated more hours per week. A number of schools expressed concern that their learners might be disadvantaged by the pilot project and so returned to the old syllabus in the fourth term to make sure that learners had the `basics' that would be required at secondary school. In some of these schools parental pressure was the reason for this shift back to the old syllabus.

Schools visited and surveyed expressed general enthusiasm for the new curriculum and reported some progress towards the re-structuring of the school day and the reallocation of human and other resources to accommodate the new curriculum. In all but the five schools mentioned above, the eight new learning areas were introduced in the third term of 1999. This involved developing a new timetable for the Grade 7 learners, allocating teachers to the new learning areas, extending the time of individual lessons to accommodate the activity-based and investigative approach advocated by Curriculum 2005 and ensuring that learners and parents were introduced to the new learning areas and the basics of Curriculum 2005. Many schools spent considerable time, during and after school, planning and implementing these changes and processes. The positive attitude to the introduction of the new curriculum was evident in that few schools reported problems in persuading teachers to adopt the new curriculum. In most cases teachers volunteered to teach new learning areas.

## 5.1.2 The Grade 7 pilot project

The Grade 7 pilot project succeeded in providing teacher training and learning support materials (both print materials and equipment) to all but a handful of pilot schools. Only two schools of those that participated in the study indicated that teachers had not attended training. In two provinces the training was affected by a SADTU strike and so had to be shortened by a couple of days.

All but two of the pilot schools received the RNE-sponsored equipment by the end of July 1999. This was an extraordinary feat given the process of selecting the equipment which involved all provincial departments, sourcing the equipment, and packaging and delivering it to schools throughout the country, in many cases to schools which are remote and difficult to reach.

The pilot schools generally received ILPs for teachers in all learning areas and learner handbooks for all learners in six of the eight learning areas. However, a considerable number of schools reported receiving insufficient learner handbooks in some of the learning areas."

The study found that teachers welcomed the learning support materials, especially the equipment provided. Teachers commented that the equipment provided them with material that gave learners 'hands on' experience in the new learning areas, that the equipment supported activity-based learning and improved the quality of the learning experience teachers were able to offer learners. This was particularly true of remote and under-resourced schools.

The ILPs were also welcomed for the guidance they provided in introducing the new curriculum and the new Learning Areas. Many teachers indicated that they had used the ILPs to guide them in their lesson planning.

Most teachers reported that they had found the training useful in introducing Curriculum 2005 but totally inadequate in providing the necessary guidance to teach the new learning areas.

### 5.1.3 Use of the materials

The study found low use of the equipment and the print materials provided by the Grade 7 pilot project. The equipment was used in only 36 of the 126 lessons observed and the learner handbooks in only 13 of the observed lessons. In 15 of the 36 lessons where the equipment was used, use was limited to the more common items such as stationery, glue and cardboard. A very small number of teachers used the equipment designated for Technology. There was, however, an increase in the use of the equipment between the researchers' first and second visits. Not only was there an increase in the number of teachers using the learning support materials, but there was also a shift in the nature of the items being used. In particular, five of the 27 schools visited used the technology equipment during the second round of visits. In contrast, there was a decline in the use of the learner handbooks from 10 instances in the first visit to three in the second visit.

There are several reasons for the low use of the learning support materials provided for the Grade 7 pilot project. The most common are:

- Inadequate training was provided for the teaching of the learning areas
- Teachers were unfamiliar with much of the equipment and/or did not know how to use it in activities in the classroom. A large number of teachers in the pilot schools requested training in the use of the equipment
- The Programme Organisers, chosen by the Grade 7 teachers, did not match those used in the ILPs and learner handbooks. Similarly, the equipment provided did not suit the Programme Organisers chosen. Teachers indicated that they would use the equipment in future for other Programme Organisers.
- The location of the equipment and the processes adopted for accessing it placed obstacles in the way of teachers using the equipment.

- ✍ The learner handbooks contained insufficient content or conceptual information to provide support to the teachers or learners. Teachers and the expert review panel were critical of the lack of content support provided by the learner handbooks, in particular those provided for the new learning areas.[11]

Finally, the study found the following common classroom practices relating to the use of learning support materials. (These observations are derived from all lessons observed in which learning support materials were used, and not only those provided for the Grade 7 pilot project.)

Learning materials promote learner participation in the classroom.

The researchers found that in 95 of the 126 lessons observed teachers used group or pair work. In only 27 of the lessons observed was there evidence of individual work at any time in the lesson.

In most lessons the learners appeared to be familiar with the routines and procedures involved in group work and moved efficiently into group activity. These activities generally allowed learner participation in the lesson, but did not always promote the learning goals of Curriculum 2005. In most lessons the group work activity did not provide opportunities for learners to 'work effectively with others' or to 'organise and manage themselves and their activities responsibly and effectively'. The activities also did not provide opportunities for learners to 'solve problems', `collect, analyse, organise and critically evaluate information' and then present this information. These missed opportunities derived mainly from the nature and management of the tasks set for groups.

The learning goals of the lesson were achieved when group work activities consisted of challenging but manageable tasks which were accompanied by clear instructions and ongoing teacher support. In contrast, active and effective learning and team work were minimised in those lessons in which learners were provided with unclear tasks; little or no teaching support; no learning support materials and vague instructions. A particular concern raised by the researchers was group work which was not accompanied by any learning materials at all. In these situations learners were not required to read, write, draw, label, or to collect or analyse information. They simply 'discussed' topics about which they knew little or nothing. Learning opportunities were also reduced when groups exceeded six learners per group and through inefficient and repetitious report back sessions.

The researchers and the expert review panel commissioned to assess the learning support materials found that the materials encourage many of the above practices both by design and omission. All the ILPs and learner handbooks provided for the Grade 7 pilot project encourage an almost exclusive use of group work in teaching and learning. The group activities suggested by these learning support materials focus overwhelmingly on discussion. There are very few activities which overtly suggest reading or writing as learner activities.

In addition, the materials do not provide adequate guidance for the planning and execution of group work which supports the learning goals of Curriculum 2005. The learner support materials were used in practical or `hands on' activities In 60% of the lessons observed learning support materials (not only those provided by the pilot project) were used for 'hands on' or investigative activities. In a small number of lessons these activities provided meaningful learning experiences which allowed learners to investigate, develop and consolidate knowledge, skills and values through the activity.

However, in the majority of lessons observed the activities or learning support materials were not used to develop learners' knowledge, skills and values. Instead the researchers found

- little or no relationship between the 'hands on' activity or learning materials and the learning goals of the lessons observed
- insufficient preparation of the activity and learning support materials
- learners were expected to apply knowledge and skills (in the activities) which had not been acquired
- the learning materials or activity were not used to provide opportunities for the learners to practise concepts and skills
- the learning materials were not used to assess learner progress and understanding.

The reasons for the above were that the teachers themselves were not always clear on the conceptual goals of the activities and therefore did not maintain a focus on the concepts to be taught. This can in part be attributed to

- teachers' lack of content knowledge
- lack of experience in teaching the new learning areas
- teachers' lack of familiarity with activity-based and investigative approaches to learning and
- lack of training in the use of the materials and equipment provided.

However, in many instances the print materials provided for the Grade 7 pilot project do not support good teaching practice. In particular the print materials:

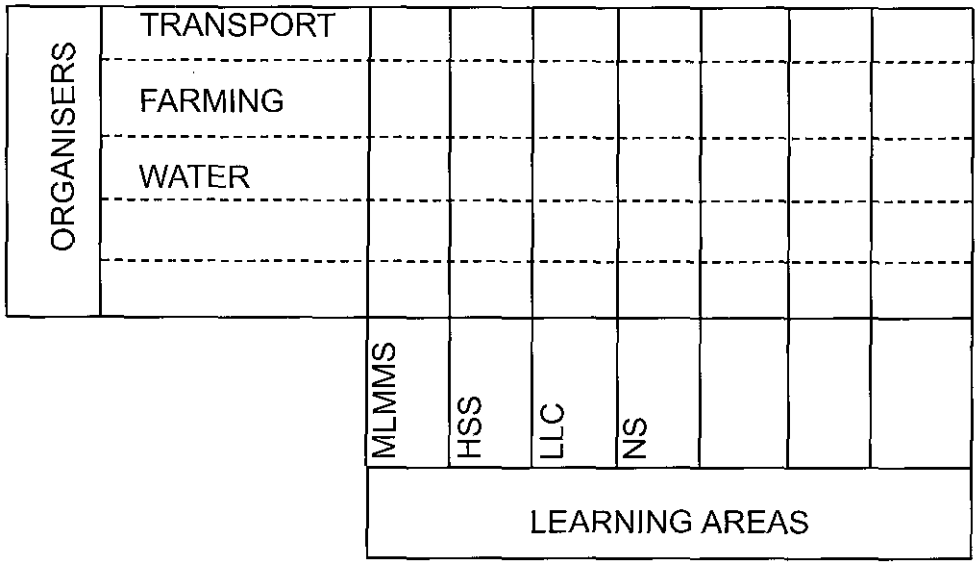
- do not provide the content and conceptual knowledge to support the introduction of new content/concepts especially in the new learning areas
- do not make explicit the conceptual tools and skills required to carry out the tasks set for learners (e.g. prepare a business plan, develop a balanced diet)
- expect learners to apply knowledge which they do not have and which has not been developed by the learning materials provided
- do not provide sequenced learning materials that build on and consolidate the knowledge, skills and values of previous learning activities.

There are two reasons why the print materials supplied by the pilot project do not provide adequate support for teachers and learners. First, the materials are illustrative and so do not provide the entire year's learning programme. The materials therefore provide content and guidance on a limited number of ad hoc activities and

should be seen as supplementary materials aimed at providing support for the learning programme. In some cases teachers have treated the II-Ps and learner handbooks as the learning programme. Learning Support materials provided in this initial stage of curriculum reform should set out the learning programme for the year. Secondly, the learning materials are designed according to programme organisers. Both the reviews of the materials and the classroom observations undertaken for this study suggest that designing learning programmes through programme organisers results in an ad hoc and unsystematic approach to knowledge and learning. Figure 2 presents two approaches to the integration of curricular knowledge. In the first approach the phase organiser (water, HIV Aids etc.) determines what is taught while in the second the concepts and skills central to the learning area determine what is taught.

Because programme organisers have no inherent knowledge structures, concepts or skills, this approach to design of learning programmes and materials development undermines the learning goals of Curriculum 2005 especially those related to the development of higher order thinking skills. Only when teachers and materials developers have specific details of the concepts, content and skills to be covered in each of the learning areas in each of the school phases can learning materials be developed which address the learning goals of Curriculum 2005 systematically and rigorously.

**Figure 4 Two approaches to the integration of curricular knowledge.**




In summary, this study found that Curriculum 2005 was implemented in the majority of Grade 7 pilot schools. In addition, learning support materials and training were provided to most pilot schools. There was, however, low use of the learning materials supplied. When learning materials were used, the ways in which they were used,

especially in 'hands on' activities and in group work, did not promote the learning goals of Curriculum 2005.

## 5.2 Recommendations

The evaluators suggest that consideration be given to the following:

### 5.2.1 Intended curriculum

The learning goals of Curriculum 2005 foreground the knowledge, skills and values widely regarded as necessary for lifelong learning, flexible workplace practice and for building and sustaining democracy and democratic practices in South Africa.

This study has found high levels of learner involvement in the classes observed. However, if this involvement is not constructively channelled towards

- reading and writing skills in addition to the oral activities that dominate these classes; and
- structured conceptual thinking in addition to the brainstorming activities presently prevalent,

then the curriculum goal of developing analytical learners and creative problem-solvers will not be attained.

The evaluators recommend that the DOE considers providing detailed guidelines which support the learning goals of Curriculum 2005 in the form of

- the minimum concepts and content teachers should cover in each learning area in each school phase
- the skills that should be taught in each learning area in each school phase • assessment exemplars for each learning area in each school phase.

These DOE guidelines should also seek to address the following imbalances which have been observed in teaching and learning practices in Grade 7 classes during the pilot project

- the dominance of oral work over reading and writing
- the imbalance between group work and individual work
- the imbalance between content and conceptual knowledge in the learning area on the one hand and integration of this knowledge with everyday experience on the other
- the dominance of activity-based as opposed to expository teaching.

### 5.2.2 Support to teachers in implementing the new curriculum Learning Support Materials

All teachers and learners should receive a textbook in each learning area. This textbook should set out the central learning framework for the year. These and other

learning support materials provided to teachers should explicitly support the attainment of the Curriculum 2005 learning goals of higher order thinking skills and applied knowledge by

- distinguishing between the learning programme (textbooks) and those supplementary materials which support the learning programme
- making explicit the key concepts, skills and values that will be covered in the learning programme
- providing the minimum content required for the development of the knowledge, skills and values of the learning programme
- providing systematic activities for the consolidation and extension of the higher level thinking skills such as collecting and analysing information etc.
- providing exemplars of assessment activities which indicate what learning should be assessed and how this should be done.

This means that materials development should be determined by the key concepts, knowledge, skills and values that need to be systematically taught in the various learning areas.

Training

The DOE and provincial education departments should consider providing systematic and ongoing (three to five years) teacher training and support in the implementation of the new curriculum. It is recommended that the training

- begin with the overall goals and structures of the new curriculum but be followed by intensive practical workshops in specific learning areas
- be supported by additional information to teachers using a variety of cost-effective methods (e.g. newspaper supplements, newsletters, local workshops)
- include components for school principals on the management of the new curriculum
- include practical demonstrations using the learning support materials provided to teachers.

The most effective training is clearly workshops followed by in-school support. However, this is not a cost-effective model. The provincial departments and DOE should consider developing models of cascade training which have built-in quality assurance mechanisms (e.g. a core of national trainers who conduct training in conjunction with provincial trainers). If a cascade model is adopted, more time should be devoted to the training of provincial trainers, as they need to have absolute clarity on the nature of the pilot, learning area-specific issues, the management of the new curriculum and assessment.

Provincial trainers have indicated that it is preferable to conduct several short workshops rather than one week-long workshop. They also thought that it was preferable to conduct workshops with clusters of schools rather than to train individual schools as this facilitates peer support and co-operation.

In general it is recommended that teacher training

- focus on the learning goals of Curriculum 2005 and how these should be achieved

- promote the use of learning materials which support the systematic development of knowledge, skills and values

- overtly support a balance between group work and individual work, between investigative work and reading and writing expository work etc.

- focus teachers' attention on the key skills and concepts which need to be developed in each learning area in the various school phases

- discourage the use of macro planning which emphasises the use of a single Programme Organiser across all eight learning areas. Not only does this result in boredom for the learners, but it undermines the development of higher order thinking skills in the various learning areas.

5.2.3 The implemented curriculum

School-based management of the curriculum

The following recommendations may be considered in the planning and implementation of Curriculum 2005 at the school level:

- Internal policies and procedures for the management of the receipt and dissemination of learning support materials should be developed in schools. These procedures should ensure that all teachers know what materials have been delivered to the school and have opportunities to familiarise themselves with the materials.

- Schools should develop policies and protocols which facilitate access to and use of learning support materials but which do not compromise the security of these materials.

- Adequate time should be allocated to planning learning programmes and `hands on' activities prior to the introduction of the new curriculum.

- Schools should develop policies and protocols for learner assessment which can be shared between teachers and with parents and learners.

- Schools should reconsider using the same Programme Organiser across all eight learning areas in the design and implementation of the new curriculum. Classroom implementation of the curriculum

The evaluators recommend that:

- Teachers be guided by the best textbooks available in designing their learning programmes, especially in this initial curriculum implementation phase.

- Teachers increase time spent on planning lessons using the learning support materials provided.

- Teachers include reading and writing tasks in all learning areas at least twice per week.

- Teachers include individual activities in as many lessons as possible.

- Consideration be given to using learning support materials that support the learning goals of Curriculum 2005 but do not necessarily contain OBE or 2005 language.

### 5.2.4. The pilot process

The DOE's decision to conduct pilot projects prior to the implementation of the new curriculum is praiseworthy as it demonstrates a commitment to learn from experience and provide the best possible support to teachers. The following recommendations are made in order to maximise the benefits of conducting similar pilot projects.

- When planning a pilot project, an integrated planning approach should be adopted which considers all forms of support to be offered to teachers (printed and other learning support materials), training programmes, and the length of time between different aspects of the project (e.g. between training and delivery of materials). In the Grade 7 pilot project the training did not refer to the learning materials which were provided to the schools and in some cases the materials were delivered prior to the training, resulting in teacher confusion.

- The pilot project should be conducted over a longer period of time to allow teachers more time to familiarise themselves with the new methodology of Curriculum 2005 and the learning support materials provided. The pilot project should also precede the training that is offered to all other teachers. This will enable DOE officials to better determine how the training should be adapted.

- Policy-related issues (e.g. policy on year-end assessment for pilot schools and the promotion of learners who have participated in the pilot) should be clarified prior to the start of the pilot project and be clearly communicated to provincial officials and schools.

- The goals of the pilot project should be clearly articulated to departmental officials and schools.

- Schools should be formally notified that they have been selected to participate in a pilot project.

- Schools should be notified timeously that they have been selected to participate in the pilot project so that the managerial aspects associated with the introduction of the new curriculum can precede its introduction (e.g. teacher allocation, timetable development, resource allocation).

Footnotes

[1] A local supplier of files reported that South Africa does not produce sufficient steel for the quantity of files ordered for this project.

[2] The numbers of provincial representatives varied from 82 (Western Cape) to 19 (Mpumalanga). An exact breakdown of numbers of participants by province was not available at the time of writing.

[3] Although the study does not systematically examine the attained curriculum, that is, what the learners have learnt, the study does include interviews with learners and examination of learner workbooks to understand the impact of the use of materials on learning. The multiple observations also raise suggestions of how the use of the materials may affect learning.

[4] One is a school for learners with special needs.

[5] One provided no data on grades offered.

[6] Included here are items provided for the teaching of Life Orientation (balls, hoops, whistles etc) and the Monopoly set and play money provided for EMS.

[7] The materials provided for the teaching of Technology have been divided into 'tools and electrical equipment' including specialised tools (eg: pliers, soldering iron, hotplate, equipment used for building circuit boards) and more familier household items (kitchen equipment, calico cloth, needles and thread).

[8] Radio/cassette recorder, hot melt glue gun, hot plate, soldering iron, multi-meter.

[9] MLMMS 3; NS 3; LO (produced by North-West Province) 2; EMS 2; HSS 3.

[10] Two schools indicated that they were awaiting proper notification of the pilot project, one school intends waiting until 2000 to begin implementation of Curriculum 2005 and another two schools gave no explanation for not implementing the pilot project.

[11] Four schools reported that they had received no learner handbooks at all.

# Bibliography


Baxen, J. and Green, L. (1999) "Primary teachers' use of learning materials" President's Education Initiative Research Report

Department of Education (1997a) Foundation Phase (Grades R to 3): Policy Document. Pretoria, Department of Education.

Department of Education (1997b) Language in Education Policy. Government Gazette, Vol. 17997, No. 383. Pretoria, Government Printer.

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

Department of Education (1998b) Duties and Responsibilities of Educators. Pretoria, Department of Education.

Department of Education (1998c) Assessment of Policy in the General Education and Training Band. Grades R to 9 and ABET, Government Gazette, Vol. 402, No. 19640. Pretoria, Government Printer.

Department of Education (1998d) Draft Assessment Polite in the General Education and Training Phase. Grade R to 9 and ABET. Pretoria, Department of Education. Department of Education (1998g) Language-in-education Implementation Plan. Pretoria, Department of Education.

Department of Education (no date a) Illustrative Learning Programmes for Literacy, Numeracy and Life Skills. Pretoria, Department of Education.

Department of Education, (no date b) Draft Expected Levels of Performance. mimeo.

Department of Education (1999) Learning Support Material Initiative in the support of the Provincial Departments of Education -A curriculum and quality perspective

Department of Education (nd) Generic guidelines for the development of Learning Support Material for Outcomes based education and training

Jansen, J. and Christie, P. eds (1999) Changing Curriculum: Studies on Outcomes based Education in South Africa Cape Town, Juta

Jansen, J. (1998) "Curriculum Reform in South Africa: a critical analysis of outcomes-based education (1)" in Cambridge Journal of Education. Vol 28, No 3, 1998

Media in Education Trust (1998) The Story of the Grade 1 Pilot Project. Department of Education

Onwu, G. O. M. (1999) "An investigation of the availability and use of learning materials in

Grade 12 Science classes in some selected schools in the Northern Province". President's Education Initiative Report.

Pile, K. and Smythe, A. (1999) "Language in the human and social science classroom project", President's Education Initiative Research Report

Potenza, E. and Monyokolo, M. (1999) "A Destination without a map: Premature Implementation of Curriculum 2005?" in Jansen, J. and Christie, P. eds (1999) Changing Curriculum: Studies on Outcomes based Education in South Africa Cape Town, Juta

Reeves, C (1999) `Are teachers likely to achieve the natural science outcomes for Curriculum 2005" in Journal of Education, School of Education, University of Natal Pietermaritzburg, No 24

Reeves, C. and Long, C. (1999) "Focus on Four: An investigation into Grade 4 mathematics teaching and learning" President's Education Initiative Research Report

Reeves, C. and Long, C. (1999) "Focus on Seven: A report on an investigation into language-sensitive activity-based methodology in primary science teaching at the Grade 7 level". President's Education Initiative Research Report

SAQA (South African Qualifications Authority) (1995) Act No. 58 of 1995. Pretoria, Government Printer.

Taylor, N. and Vinjevold, P eds. (1999) Getting Learning Right: Report of the President's Education Initiative Research Project. Johannesburg, Joint Education Trust

Materials provided for the Grade 7 Pilot project

National Curriculum 2005 : Illustrative Learning Programmes - Grade 7

Arts and Culture
Economic and Management Sciences Human and Social Sciences
Language, Literacy and Communication Life Orientation
Mathematical Literacy, Mathematics and Mathematical Sciences Natural Science
Technology
Teacher support material: Arts and Culture Learner Handbook:
Economic and Management Sciences Human and Social Sciences
Language, Literacy and Communication
Mathematical Literacy,
Mathematics and Mathematical Sciences
Natural Science
Technology

Layout and