

Learning Support Materials (LSMs) and Curriculum 2005 (C2005)

**A research paper on the role of learning support materials in
Curriculum 2005**

for the

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Abstract

The report examines the role of LSMs in bringing about the change envisaged in Curriculum 2005. It highlights three aspects of the new curriculum that are especially pertinent: resource-based learning, information literacy and lifelong learning. It argues that lifelong learning depends on information literacy, and this literacy can only be acquired through interaction with resources. The new curriculum thus requires resources.

The report then examines the way in which LSMs are conceptualised in policy documents. It reveals a lack of clarity both with regard to the nature of LSMs and who is responsible for producing them. It proposes a framework for the description of LSMs, which distinguishes between resources (the 'raw materials') and LSMs (resources shaped to a pedagogical purpose).

The question of access to resources is then considered. The report argues that access requires a minimum level of expenditure, and points to the fact that spending on LSMs has fallen dramatically over the past four years. To enable access, LSMs must be well-structured, well-prepared and appropriate. They must also reach schools on time and be well-managed when they get there. The report also considers access to libraries and computer technology, both of which are vital in resource-based learning. It reveals severe cutbacks in school and provincial library services, and disparities with regard to access to libraries and computer technology, in particular and to LSMs in general.

In multilingual societies, language is a factor that determines access to LSMs. The report reveals that although policy advocates a multilingual approach, increasing numbers of School Governing Bodies are opting for education in English. This will influence publishing in all African languages..

The report then turns to the situation in classrooms and finds wide disparities between teaching practices in well-resourced and under-resourced schools with the former being closer to the practices advocated by C2005 than the latter. The report suggests that change will not occur overnight. Resources construct practice and are necessary in order for real change to occur.

Low levels of literacy, especially in rural schools are exacerbated by the fact that children are expected to read in an inadequately mastered second language. Consequently, teachers interpret textbooks that are often inaccessible to learners thus setting patterns of rote learning and dependency that persist throughout children's schooling. Poor basic literacy is also a concern as it is fundamental to the development of more sophisticated literacies required by C2005.

The report considers the teacher-textbook debate and challenges its polarity, arguing instead for a hand-in-hand approach: textbooks and other LSMs cannot on their own improve teaching; they must be accompanied by teacher development. It is this view which frames discussion of three important components of teacher competence: use of LSMs; design / production of LSMs; and evaluation of LSMs

Research suggests that teachers mediate LSMs and adapt them to existing practice and that teachers do not always share the vision of materials writers nor understand their conceptual goals. They may not even use LSMs when they are available. Nevertheless, international research has shown that carefully designed LSMs can support curriculum change.

While policy now requires that teachers produce some of their own LSMs, research reveals wide disparities in their ability to do so. For many the desire to produce their own LSMs does not translate into a practical competence. Some commentators believe that it is unrealistic to expect teachers to produce their own LSMs: they should rather make use of good quality textbooks (which provide the learning programme), and develop their own supplementary materials. However this highlights the importance of consistent, fair and competent book evaluation systems/ practices, an area which research has shown to be currently extremely problematic.

In conclusion, the report re-emphasises the importance of resources and stresses their role in capacity building. Concern is expressed that policy documents do not always pay sufficient attention to this. The report also points to the need to increase efficiencies in the system and spend what funding there is wisely.

Finally, it highlights the need for more systematic research on what happens in classrooms to inform curriculum planning and implementation.

1. LSMs: setting the scene

1.1 *Economic and political terrain*

Our discussion of learning support materials (LSMs) and curriculum change is located within a particular educational context. While it is beyond the scope of this Report to explore this in great detail, a broad sketch is necessary to highlight important factors which frame the discussion.

Two over-arching contextual factors are particularly relevant:

- Since 1994, South Africa has re-entered the world economy and become subject to the pressures of globalisation, resulting in a reduction of state resources available for social spending.
- At the same time, the state has inherited racially-based and urban-rural inequalities¹ from the apartheid era. These call for redress and transformation but demand state resources now in short supply.

Globalisation has affected South African education in complex ways. On the one hand, it has stimulated the need to reform and modernise the curriculum to be globally competitive. To achieve this, policy-makers have looked West, in particular to English-speaking countries (USA, Canada, Britain, Australia, New Zealand), resulting in policy proposals which draw from 'what is judged to be the best of international experience' (Christie 1999: 281).

This has not, however, been the only motive for curriculum change. The government has needed to make a clean break with apartheid education. Here the effects of globalisation have played a constraining role. The Growth, Employment and Redistribution Strategy (GEAR) has resulted in cuts in social spending, making it extraordinarily difficult to redress stark inequalities in the education system. These inequalities relate to both resources and capacity, and operate between individuals, schools and provinces. The new curriculum, then, is likely to have very different results in 'different race-based resource contexts (Jansen 1999: 4)', making it difficult to achieve more than a symbolic break with the past.

In some instances, the cultural aspects of globalisation combine with its economic consequences to make redress doubly difficult. A case in point is language. The Constitution and the state's 'Language in Education Policy' promote the development and use of African languages, which requires resources. At the same time, many parents perceive English as the global language and do not actively support the policy. There is no pressure, then, for resources to be made available, and as a result, the majority of children in African schools experience the educational consequences of linguistic disadvantage (Macdonald 1990). Language is central to our discussion of LSMs because it determines access to various kinds of literacies.

The intersection between globalisation and redress creates tensions: to modernise, transform and become globally competitive requires the very resources which global economic forces have diminished. That South Africa is caught in a cleft stick is illustrated when we try to measure ourselves against the global standards of wealthy industrialised countries, as for example, in the much-publicised TIMSS study.

Spending on education in South Africa and other countries said to have outcomes-based curricula (Table adapted from TIMSS 1998: 30).

¹ 53% of South Africa's households live in poverty and 70% of poor households are in rural areas (Kgobe 1999: 2). 57% of learners attend rural schools (Gordon 1999: 41).

Country	Gross National product per capita (US dollars)	Public expenditure on education as % of gross National Product
Australia	17 890	3,69
Canada	19 570	4,62
Netherlands	21 970	3,3
New Zealand	13 190	3,15
South Africa	3 010	5,12

These figures show that while South Africa's new curriculum is internationally oriented, the resources to put it into practice are limited. This needs to be kept in mind when considering the nature and role of LSMs in the curriculum. As Minister Asmal puts it:

It is important to ensure that the large sums that are needed for learning support materials each year are wisely spent and represent the kind of value for money that is appropriate to our circumstances as a middle-income country with a majority of poor citizens. (1999 a)

South Africa is, of course, not the only country to feel the impact of globalisation. Studies from other countries in similar economic circumstances can reveal its effects on resource provision, especially that for LSMs. Detailed case studies have been undertaken by Samoff et al (1994) in five countries described as coping with crisis: Tanzania, Senegal, Brazil, Hungary, Costa Rica. Their observations are relevant to South Africans trying to implement an ambitious curriculum while simultaneously suffering budget cuts.

They report that governments have tended to cut more heavily on capital than recurrent expenditure, that supplies are cut more severely than personnel costs, and that books and stationery are amongst the first to go (de Moura and Alfthan, in Samoff, 1994). In many countries, there is now an explicit or implicit policy of shifting the responsibility for spending on instructional materials to parents and families (Woodhall, in Samoff, *ibid*: 16). Another common strategy employed by governments is to aim for increased efficiencies within the system. Woodhall (*ibid*: 17) comments, however, that some measures have reduced rather than increased efficiency. By cutting expenditure on books below the barest minimum, for example, they are likely to waste not save resources because of the negative effects on learning.

There are parallels here with South Africa where spending on non-personnel items (classrooms, textbooks, stationery, equipment, water, school maintenance, etc.) has decreased for the fourth year in a row; while the number of learners has increased by one million (Bot & Shindler 1999: 1; IDASA in Streek 1999: 42). This has affected poorer provinces² more seriously than wealthier ones (Bot & Shindler 1999: 1).

Provincial budgets 1999/2000				Expenditure non-personnel items %		
Province	Total (bn)	Education (bn)	%	1995/96	1997/98	1998/99
Eastern Cape	R15,956	R6,7	42	9%	15%	7%
Free State	6,487	2,7	42	10%	11%	10%
Gauteng	15,290	6,2	41	16%	12%	12%
KwaZulu-Natal	18,707	7,2	38	19%	9%	8%
Mpumalanga	6,048	2,7	45	13%	8%	9%

² Christie (1999: 281) notes that whereas curriculum policy is formulated nationally it is implemented and funded provincially with profound resourcing implications.

Northern Cape	2,216	0,8	36	31%	11%	14%
Northern Province	12,035	5,5*	46	11%	10%	9%
North West	7,770	3,2	41	17%	11%	10%
Western Cape	9,980	3,7	37	12%	15%	11%
National	94,489	38,7	41	12%	12%	9%

Source: Edusource Data News no 25 July 1999

Source: Edusource Data News no 26 Sept 1999

*includes arts, culture and sport

At the same time, personnel costs have risen dramatically. Between 1995 and 1997, expenditure on personnel went up by 36% while non-personal expenditure rose by only 7%. This disparity resulted from 'widespread hiring of new educators (approximately 30 000) and higher levels of pay (Bot & Schindler 1999: 2)', and it will be difficult to resolve in a time of widespread unemployment. Bot and Shindler describe its effects:

As a consequence of the cuts in non-personnel expenditure, parents are now having to make a larger financial contribution to schools. Parental ability to pay will influence the quality of service provided. (*ibid*: 2)

This will clearly widen the educational gap between rich and poor since many parents simply do not have the money to pay. And although The Norms and Standards for School Funding are redistributive, this will be based on 'reduced available funding (Kgobe 1999: 3)'.

This, then, is the backdrop to our report on the role of LSMs in C2005. In the body of the report we examine the nature of curriculum 2005, policies relating to LSMs and access to them, and their use in schools and classrooms. As we point out in the next section, all these aspects are interrelated and can only be properly understood in the political and economic context we have just outlined.

1.2 Theoretical framework

The policy we analyse in this Report relates explicitly and implicitly to the curriculum. We see curriculum as more than just a plan or policy. It includes the interpretation and enactment of policy at various levels of the education system. It is actualised in schools and classrooms and it is always in process:

Curriculum construction is an ongoing social activity that is shaped by various contextual influences within and beyond the classroom and accomplished interactively, primarily by teachers and students. The curriculum is not a tangible product but the actual, day-to-day interactions of students, teachers, knowledge and milieu (Cornbleth 1990: 23).

Curriculum, then, cannot be properly understood – or, for that matter, changed – without attention to context. And the context is multi-dimensional. It includes the over-arching social, political and economic conditions briefly referred to above, the traditions and ideologies of school and society, and the structural roles, relationships and ways of operating in the education system as a whole.

Thus we regard an understanding of policy-as-practice as central. Policy statements can be unpacked in terms of their underlying assumptions, but this must occur simultaneously with an understanding of practice on the ground (Samoff, 1994; Czerniewicz 1998). Policy intentions and policy in practice constantly influence each other; even after a policy document is legislated, policy is still being generated and implemented with both intended and unintended consequences. As Dale (1992:394) puts it:

While in no case can a policy fully guarantee or expect or even predict with great accuracy what its outcomes will be, it seems to me better to see that uncertainty arising from a combination of the possibilities and preferences – rather than the assumed requirements – built into the policy, and the dynamic processes through which it eventually informs changes

or reinforces existing practice, than to search for ways of 'implementing' policy more 'faithfully'.

Our understanding of curriculum policy making is that it is ongoing, unstable and interactive. It is interpreted and re-interpreted at different levels of the education system, and at each level, there is a compromise of ideas, needs and interests.

Our view of curriculum policy informs our analysis. We do not only look at plans and intentions. We follow policy through from its legislation in official documents to its translation in implementation guidelines, and finally to materials designed to enable teachers to put it into practice. We then relate this to research, which reveals what is actually happening when curriculum is enacted in classrooms.

We are also interested in the way policies co-exist, the ways in which they are framed by other policies, the impact that policies have on one another; the contradictions that emerge between policies; the overlap between policies, the potential policies have to influence one another and the lack of co-ordination (or otherwise) in policy formulation in different sectors.³ We thus analyse a range of related documents (for example, library as well as curriculum policy) in order to track similarities and/or competing messages that are interpreted and acted upon by those on the ground.

We also believe that any analysis of policy must consider resources and capacity seriously. By resources we mean both physical and human resources, while the term capacity is equated with existing capability and competence (i.e. it is not about potential) and refers to physical capacity in the form of infrastructure as well as human capacity in the form of skills. Resources and capacity refer to those, which already exist, those that are allocated and those which are required⁴.

Resources and capacity are central to understanding the link between policy formulation and the enactment of policy in practice. This is frequently obscured by the conceptual and practical split between policy formulation and implementation and has often meant that practical issues relating to resources and capacity have been ignored when policy was devised, only coming to light when there were attempts to translate the policy intentions into practice. This seems to be the case in emerging policy analysis of C2005 (Christie 1999: 281).

1.3 Curriculum 2005 (C2005)

As has been mentioned earlier, curriculum change has been, in part, a response to the need for the economy to become globally competitive.⁵ It has also been driven by the state's need to transform the curriculum into one appropriate for a newly democratic society, to create one that will meet the government's stated goals of equity, redress, democracy, access and participation⁶. These different imperatives are apparent in a statement from an introduction to C2005 intended for teachers, which explains how it was conceptualised:

³ Policies frames and interaction are described in more detail in Czerniewicz 1998

⁴ These will include human resources and capacity within the state sector at all levels from departmental to school, as well as within the private sector, and including both availability of staff (as in staff to undertake the required functions) as well as competence (as in having the skills to do the work); financial resources and capacity including not only sufficient funds but also the ability to manage those funds; physical capacity in the form of infrastructure such as electricity, telephones, usable roads (which provide access in remote inaccessible places), as well as functional transport systems; and physical resources such as storage facilities, security in the form of controlled access, padlocks, burglar bars and so on.

⁵ Commentators (e.g. Jansen 1997, 1999) have challenged the implied relationship between education and economic growth, especially in a post-colonial/apartheid context such as SA.

⁶ Commentators (e.g. Jansen 1997; Kraak 1998, 1999) observes that these goals are contradictory and create tensions in policy implementation.

Education, business and industry have come together to identify the knowledge and skills that learners need to be competent, responsible, thinking citizens of the next century. (Tiley 1997: 2)

The old curriculum was seen to need modernisation. It was too academic: it did not prepare students either for the world of work or for life in a democratic society. Policy-makers were concerned to design a curriculum to meet South Africa's needs in the 21st Century. As workers, South Africans could not expect to have the same job for life. They needed to be flexible, technologically literate and able to learn new skills independently throughout their working lives. As citizens they needed to be able to think critically and act responsibly in a new democracy. In both roles, they needed to be problem-solvers who could understand and deal with 'real world' problems as opposed to academic ones. These ideas are not peculiar to South Africa; they signal 'transnational shifts in our understanding of curriculum (Jansen: 1999: 1).'

For these reasons, curriculum designers developed a progressive, outcomes-based pedagogy, which includes the following principles:

- it focuses on the development of skills, knowledge and values rather than 'content';
- the skills, knowledge and values are specified in terms of learning outcomes;
- activities are relevant (i.e. they are closely linked to 'real world', everyday problems);
- discrete 'subjects' have been replaced by integrated 'learning areas' so that learners can do projects which address 'real world', interdisciplinary issues;
- learners are active and independent and take responsibility for their own learning;
- learners work co-operatively in groups using whichever language best suits their purposes;
- learners are assessed in terms of their ability to demonstrate that they have achieved the learning outcomes;
- teachers become facilitators of learning: they design tasks and activities, provide resources, evaluate, assess and give feedback to learners.

Broad curriculum outcomes have been designed nationally and specified in curriculum documents; the translation of these outcomes into learning programmes is the responsibility of teachers:

No longer will teachers ... just implement curricula designed by the education department. They will be able to implement many of their own programmes as long as they produce the necessary outcomes. (DOE 1997g: 29)

The test of this outcomes-based curriculum is whether it actually enables teachers to design good curricula (Malcolm 1999: 76). Kraak (1999: 51) suggests that it 'assumes a high degree of capacity in curriculum design which South Africa does not possess', that it will 'play havoc with the national educational publishing industry' and that it will 'have the effect of opening up learning and teaching to laissez-faire curriculum development which is sectional in nature' (i.e. which may stand in the way of goals such as multilingualism and anti-racism).

The approach to learning in C2005 is 'constructivist'. Instead of students learning readymade knowledge from their teacher or a single textbook, they construct their own knowledge through problem-solving activities or projects which require them to draw on a variety of resources (books, newspapers, magazines, dictionaries, the internet, people, 'real world' objects, etc.) In constructivist pedagogy, learning is contextually embedded; it begins with what learners bring to the situation. It is co-operative and it involves using language to discuss, ask questions and make sense of things. In a multilingual classroom, it is important that learners are free to use a language in which they can best think and express concepts.

This pedagogy is also referred to as learner-centred or progressive. Learner-centred pedagogies are generally described – rather unhelpfully, in our view – in opposition to teacher-centred ones.

In the latter, the teacher is the authority and teaching generally involves the whole class, often using a textbook of some kind. In the former, the learners' relationship to authority differs; they must take more responsibility for their own learning, working co-operatively in groups and using a variety of resources. Progressive pedagogies are often described in opposition to traditional ones. Traditional curricula are said to emphasise a common core of academic knowledge with strong boundaries between subjects, whereas progressive curricula integrate 'subject knowledge' and place value on 'local' or contextual knowledge - the 'real world' or cultural knowledge that learners bring to the classroom. As Cuban (1997) points out progressive education policies have been introduced in America on a number of occasions over the last hundred years.

Darling-Hammond (1997), an American advocate of progressive education points to one of the main difficulties in putting it into practice - something that echoes over and over throughout this Report:

Perhaps the single biggest obstacle to maintaining progressive reforms is the extensive skill needed to teach both subjects and students well. In all the previous reform eras practitioners asked to implement reforms like 'open education' or 'the project method' knew they were supposed to make learning relevant and attend to learners' needs. However, they often did not know how to fashion work that was rigorous as well as relevant, how to employ variable student-based strategies and also teach for high levels of disciplined understanding in content areas. And schools were often unable to support the new pedagogies with new forms of organisation, governance, and professional development. Many teachers lost track of either their students or the curriculum goals as they broke with their previous routines, trying to become more child-centred by letting go of subject matter standards or more subject-centred by ignoring students while the curriculum marched on ahead. (p. 12)

What Darling-Hammond points to is that there are more or less rigorous and effective versions of progressive pedagogy. Cope and Kalantzis (1993) two Australian educators, distinguish between rather laissez-faire forms in which the teacher takes a back seat to learners' whose commonsense knowledge - or 'voice' - is given centre stage; and versions like that of Darling-Hammond where the teacher has very clear goals and authority vested in her or his knowledge of the subject matter and of pedagogy. They believe the former version of progressive pedagogy denies disadvantaged learners access to powerful forms of knowledge in society. Similar understandings seem to be emerging in South African commentaries on C2005 (Gultig 1999). Some commentators have suggested that the teacher's role is diminished (Jansen 1999; Kraak 1999) or uncertain (Deacon & Parker 1999) raising concerns about the direction progressivism will take here.

With regard to LSMs, one should note that whether a progressive, learner-centred approach or a traditional teacher-centred approach is adopted, learning materials will still be needed. There is some likelihood that the former approach will require more in terms of LSMs than the latter, as well as requiring extensive in-service teacher education. The resource and capacity demands of C2005 have been highlighted by two academics who have visited South Africa recently. Krashen (no date: 1), an American specialist in second language acquisition and literacy, said:

Curriculum 2005 is patterned on Western education models which have adopted resource-based instructional approaches ... [This] places heavy emphasis on experience-rich, print-rich, skills-oriented curriculum that will produce a generation of school graduates ready to compete with the world's best.

He added a proviso, however: 'On paper, Curriculum 2005 is indeed of top world standard. The problem is, can we match the curricular requirements with effective classroom practices?' Malcolm, an Australian, has described us as taking a voyage of faith, which is in his words, 'a high risk choice in a country where teachers have a low knowledge base (in relation to what is required), the tradition is bureaucratic and text-centred, and the system is woefully under-resourced (1999: 110).'

We turn now to some key, interrelated elements of outcomes-based education (OBE) in the form it takes in C2005, which we believe lie at the heart of understanding LSMs and their role in implementing and supporting the new curriculum. These are:

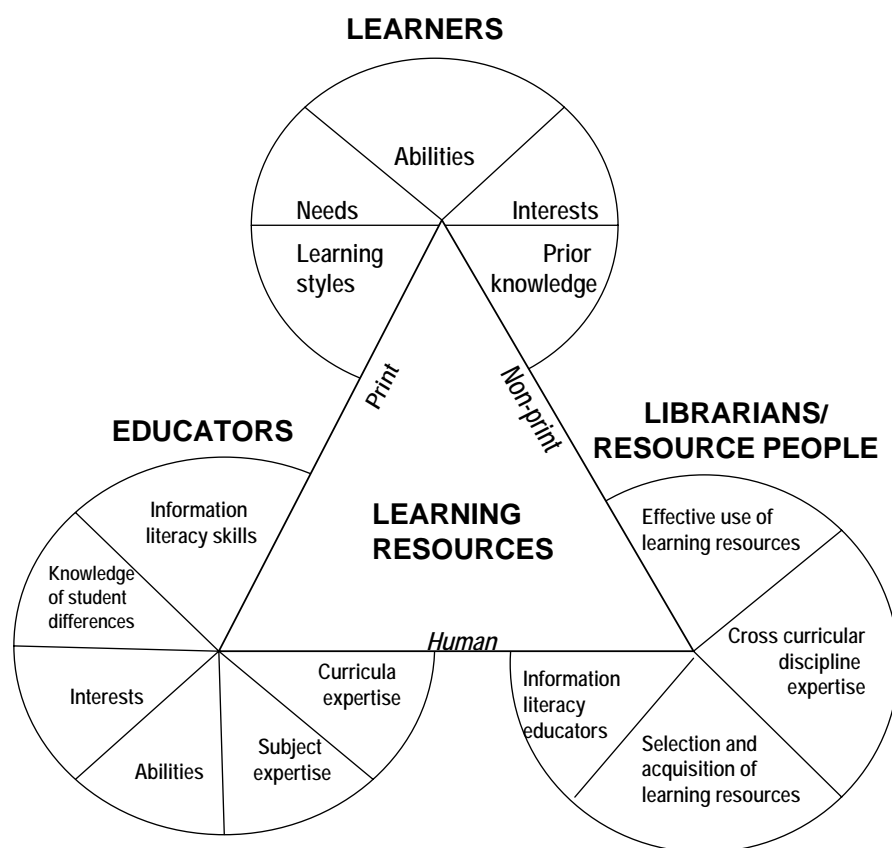
- resource-based learning
- information literacy
- life-long learning

As we have just mentioned, resource-based learning is integral to C2005. Information literacy is a means of access to resource-based learning and a consequence of it. Lifelong learning is both an outcome of resource-based learning and a rationale for it. All of these elements are vital if access to learning and equity in education are to be achieved.

1.3.1 Resource-based learning

1.3.1.1 General features of resource based learning

The adapted diagram below provides a succinct representation of resource-based learning. It both highlights the centrality of resources as well as indicating the complexity of overlapping skills, people and attributes required. It provides a useful springboard for articulating some of the key elements of resource-based learning.



The original model upon which this is based describes resource-based learning as 'an educational model, which, by design, actively involves students, teachers and teacher librarians in the meaningful use of a wide range of appropriate print, non-print and human resources (Manitoba Education and Training, 1994).'

The many definitions of resource-based learning in the literature overlap, and highlight several features that can be considered either characteristics or intentions. A summary of these features from a range of sources⁷ includes the following points:

- it is both a philosophy of education and a methodology for teaching and learning (Teaching and Learning Centre, 1998)
- it is a planned educational programme which requires resources that are structured to support learning (University of Prince Edward Island, 1999)
- it involves the achievement of both subject and information literacy objectives through exposure to and practice with diverse resources.*(ibid)*

The premises on which resource-based learning and C2005 operate are the same, and when we examine policy documents, we shall see this again in the way LSMs are conceptualised. resource-based learning - like C2005 - is learner-centred and promotes active learning. It requires different learning strategies such as project work, enquiry-based work and topic work. It operates on the premise that students learn by doing and making meaning as individuals. It allows them to vary the rate at which they learn, and encourages them to be creative, imaginative and curious. It allows for the active construction of personal understanding using reflection and self-assessment.

Teachers and librarians become motivators and facilitators in the learning process and provide the impetus which drives students to seek information and become creative problem solvers (Learning Resources Council, no date). Thus:

...the shift in emphasis in the teaching and learning environment is from the teacher as the source of knowledge and information to the teacher as the facilitator of learning from resources. The resources have typically been selected and adapted not only for their content but also for the ways in which they support independent study. (SAIDE in UWC:17)

Teachers employ many different instructional techniques. They are described as resources and guides rather than givers of information. They are required to collaborate with one another across subject areas and grade levels.

Because the methodology allows students to learn from their own confrontation with information resources, teachers must be able to tailor resources, learning activities, the location of those activities and expected learning outcomes to the needs and abilities of each learner. The Norms and Standards for Educators (1998) describe the teacher competencies required for resource-based learning in C2005.

In addition, much of the literature observes that resource-based learning requires access to a library (in the international literature this is assumed to be a school library). Access to a teacher/school librarian is said to improve attitudes towards reading and the library (Schon, Hopkins, Everett, & Hopkins, 1984). Local studies (as described later in this Report) recognise that the ideal of a functioning library in every school is not achievable in the short term, but claim that successful implementation of resource-based learning (and the development of information literacy) requires some sort of resource person in the school as well as access to some kind of library (see, for example, Hart 1999 for elaboration of this point).

Clearly, in a curriculum which is orientated towards the 21st century and the 'information age', access to computers and the Internet is also important. In the short term, it is unlikely that this is

⁷ The source is only listed when an actual quote is mentioned. For the rest this section drew on a range of definitions of resource-based learning in the literature. Of interest is that almost all the sources on resource-based learning come from Canada and Australia, developed and relatively wealthy countries which have been implementing RBL for years.

going to be possible for many schools. However, we consider this issue in the section on technology later in this Report. The draft Norms and Standards for Educators (1998) require that teachers are computer literate to enable them to design learning programmes and LSMs.

The centrality of resource-based learning to achieving the outcomes of C2005, as well as their complexity, is captured in this summary:

Through resource based programs students develop the skills necessary for gaining intellectual access to information, acquire knowledge and understandings and use resources for personal growth and fulfilment.

In particular, these programs provide students with opportunities to:

- develop the capacity to recognise a need for information, to know how and where to find it from a range of sources, and how to select, organise and communicate it to others;
- acquire the skills required to analyse, interpret, synthesise and organise information as well as the language and communication skills of reading, writing, viewing, speaking and listening;
- develop as critical thinkers and creative problem solvers while building on a dynamic view of themselves as confident and discerning information users;
- extend their cultural understandings and their information competencies in increasingly complex contexts, using a range of information sources, formats and technologies as an integral part of their learning;
- use resources including literature, to further their personal growth.

The knowledge, understandings and the necessary skills for learning are introduced developmentally and incrementally. In developing these abilities, teachers and teacher librarians work co-operatively to combine a knowledge of the curriculum, a knowledge of individual students' needs and competencies and a knowledge of information sources, resources and technologies. (Australian School Library Association and Australian Library and Information Association, 1994)

1.3.1.2 Implications of resource-based learning for C2005

Resource-based learning places resources at the centre of learning, and there are dangers in underestimating what this entails. Proponents of resource-based learning in C2005 say easily, 'Use what is around you' or 'Use what you have got'. The assumption seems to be that resource-based learning is relatively easy to achieve because 'there is a wide range of educational resources within every teacher's reach' (Media in Education Trust, no page number). However, as its critics suggest, if it is not properly understood and resourced, the results may be shallow and incoherent.

Resource-based learning requires carefully planned activities progressively linked in well-structured learning programmes, without which learning may be arbitrary and superficial. It is a constructivist approach which, as McKensie (1997) points out:

... can be very slow, very inefficient and somewhat unreliable. At its worst constructivist learning can reinforce ignorance, reward prejudice and keep students in the dark.

Furthermore, the problem of time is exacerbated when students are learning in a second language or a multilingual classroom.

1.3.1.3 Teachers

In order to successfully utilise resource based methods a very skilled practitioner is needed, one who is able to develop the cognitive outcomes specified in the curriculum, who is able to play a facilitating role quite different from the traditional teaching role. Most teachers in South Africa (and internationally too) have to undergo a change process in order to develop the competencies outlined in the section about reproducing LSMs later in this Report.

1.3.1.4 Learners

Resource-based learning also requires a change in attitude and new competencies on the part of learners; learning through resources requires new skills and approaches, and high levels of

literacy (Mckensie 1997). Indeed a local report (UWC 1997), observes that learners who have not grown up with the methodology, might not know how to learn in this way and may dislike doing so.

1.3.1.5 Access to resources

Even with skilled teachers, resource-based learning requires a range of resources, preferably in the form of a functioning school library and some sort of librarian, or a good public library. It is arguable that in the information age resource-based learning should include access to technology and the Internet.

1.3.1.6 The complexity of materials development

Although resource-based learning relies on the use of resources, they cannot simply be used in their raw state. They need to include a variety of diverse print resources, and they must form part of a framework that develops and supports learning. Either the teacher has to create that framework or materials developers, publishers and educationalists must do so. Like all LSMs, they require a careful thought-out design, adequate planning, enough preparation time, sufficient funding, a thorough implementation process and a continual cycle of evaluation and development.

1.3.1.7 An enabling environment

Essential support for resource-based learning goes far beyond the provision of resources. It must also include the development and implementation of resource-based programs, planned co-operatively by classroom teachers ideally in collaboration with a school librarian. Such programs are said to be the most effective way of providing materials and services for resource-based learning (Hambleton and Wilkinson 1994).

In addition, in the local context there is a need for resource and capacity development in order to ensure the storage and management of resources in minimally equipped schools with little security and teachers with little experience of materials management. When resource-based learning is managed, resourced and facilitated effectively, one of its outcomes is information literacy, to which we turn next.

1.3. 2 Information literacy

Integral to the constructivist pedagogy which characterises C2005, is the notion of information literacy. Through a constructivist lens, information itself is reconceptualised. It is no longer a thing or a piece of data or a commodity, but a process which involves and necessitates problem-solving, decision-making and critical thinking. Thus information literacy expresses the move away from repeating, copying and getting the 'right' answer to processing, understanding and reshaping information in order to solve problems.

Whilst we do not see a necessary relationship between education and economic growth, a statement by President Mbeki in 1996 on the economic importance of information literacy, seems well-founded:

The ability to use information effectively is now the single most important factor in deciding the competitiveness of countries. Information-literate individual communities and countries are able to take advantage of educational, work and communication possibilities. (DoNE 1997f)

Thus information literacy can be understood to be a functional literacy needed to cope with the demands of the information society in the 21st century and as an umbrella term including traditional literacy (reading and writing), media literacy, visual literacy and computer literacy (Hart 1999:6). It is clearly a product of resource-based learning; it cannot be achieved without access to print-based resources. Its principles underlie C2005, and Czerniewicz (1999a) describes in detail how they are manifested in a range of documents across the educational and economic policy spectrum.

Information literacy has different dimensions. At a practical level it involves knowing about information, about sources, about where to find appropriate information. At a deeper level it is about knowing how to use information for higher level thinking, as well as the concomitant use of higher level thinking skills to manipulate, assess and evaluate information. It is thus related to both resource-based learning and lifelong learning. Lifelong learners need to know how to learn, how to locate, manipulate and assess information, how to deal with problems, how to evaluate and use information appropriately. Resource-based learning is the mechanism that develops information literacy, itself a cognitive skill whereby learners construct their own learning through interacting with a number of sources.

Information literacy skills as exemplified in the framework of C2005 (and elsewhere in the world where outcomes based and competency based approaches are on the increase) are developed through topic work, theme-based work, enquiry-based learning and project work all of which require access to a range of resources (Kerry and Eagleton 1988, in Hart 1999). Furthermore, the attributes which commonly describe information literacy – knowledge, skills and attitudes – are inculcated through information literacy education, which the literature suggests happens best through integration of learning areas rather than as a separate subjects.

Success in integrating information literacy into the curriculum is critical to ensuring that an information poor underclass does not develop (Moore in Hart 1999:60). As will be discussed in more depth later, studies in information literacy education (both locally -Hart 1999, Borman 1995, Zinn, 1995 and internationally – Meyer and Newton 1992, quoted in Hart 199: 62) raise concerns about the ability of teachers to manage resource-based, learner-centred classrooms premised on information literacy principles.

1.3.3 Lifelong learning

As we have said, C2005 assumes that as workers and citizens in the 21st century South Africans need to be able to learn new skills, attitudes and knowledge independently throughout their lives. There is consensus in the literature that information literacy developed through resource-based learning provides learners with the competencies they need to become lifelong learners; the following quotations are typical:

... students who have learned through a resource based strategy acquire information literacy , some of the skills most needed to be successful adults. They have the ability to develop independent responses to problems, a skill that employers say is lacking in present high school graduates. They are secure in the their ability to locate relevant information and use it in productive way for their personal and community well being although they will function in a world vastly different from the one that exists in their school days (Author unnamed 1999)

and

Today's society is experiencing the tremendous impact of the information age. Information is growing and changing so rapidly that it is no longer feasible or acceptable to focus solely on content as the curriculum in our schools. Informed citizens and employees must continue to be learners throughout their lives. Schools will serve students well by helping them to become life-long learners. To do this, teachers and students will need access to a variety of learning resources.

The main goal of resource-based learning is to provide the opportunity for all students to develop independent learning skills, in conjunction with the acquisition of a basic body of knowledge, which will enable them to become life-long learners. Full attainment of this goal will require that resource-based learning be implemented in every classroom in the province (anon 1999).

Clearly then, access to resources of the right kind is critical to the development of strategies for lifelong learning. While focus on lifelong learners has tended to be in higher education, and much of the policy work and research dealing with it are in the FET and HET bands of education, it remains relevant to our discussion of the role of LSMs in C2005 for several reasons:

- The essential foundation for lifelong learning – information literacy – is laid in the GET phase;
- Learners emerging from C2005 are expected to participate in and survive the working world as lifelong learners;
- Information literacy is critical in both spheres;
- Principles emphasised in discussions of lifelong learning - such as access, flexibility and equity - are central to C2005;
- Many C2005 assert that they are founded on a commitment to lifelong learning;
- In particular curriculum documents intended for teacher workshops stress the importance of lifelong learning⁸.

We now move on to an examination of how these issues relating to resource-based learning and C2005 are understood and explained in South African policy documents, with a particular focus on the conceptualisation of LSMs.

2. LSMs as conceptualised in SA policy documents

A range of policy documents was reviewed in order to establish how LSMs are conceptualised in terms of

- The nature of LSMs
- The role of LSMs in teaching and learning
- The responsibility for producing LSMs

These reflect the different stages and levels of curriculum policy intention and interpretation: they include official documents expressing policy intention; documents and publications interpreting and explaining new policies to teachers, education officials and other interested parties such as publishers and materials developers; and materials used in C2005 training workshops for teachers.

⁸ Examples include: The DoNE Generic Guidelines For The Development of Learning Support Material for Outcomes Based Education and Training, Under 'Principles for the development of Learning Support Materials' the first point stated is that 'learning support materials should 'promote a love for lifelong learning' (pg 3); The Media in Education Trust (April 1997) used by the DOE states under 'Guidelines for recognising good educational materials,' that 'good educational materials should encourage a love for lifelong learning' (no page number) and the DOE: Curriculum 2005 Lifelong Learning for the 21st Century (information booklet produced by the DOE and distributed in schools) says that 'The new education system introduces a lifelong education system which is people-centred.'

The documents reviewed are summarised in this table:

Kind	Name	Date
The National Department of Education curriculum policy documents:	DOE Foundation Phase (grade R to 3) Policy document	October 1997
	DOE Intermediate phase (grade 4 to 6) Policy document	October 1997
	DOE Senior phase (grade 7 to 9) Policy document	October 1997
National Department of Education documents on Further Education and Training (FET)	DOE Report of the national committee on further education: a framework for the transformation of Further Education and Training in South Africa	14 August 1997
	DOE Green Paper on Further Education	April 1998
	DOE Strategic framework for reviewing and modernising FET programmes: working document	19 July 1999
National Department of Education documents explaining the curriculum to teachers	DOE Outcomes based education in South Africa: background information for educators	March 1997
	DOE Curriculum 2005: lifelong learning for the 21 st century	Feb 1997
Workshop materials for teacher training for C2005	Curriculum 2005: South African Education for the 21 st Century: (Media in Education Trust)	
Independently published research and guidelines	PEI Report (Getting Learning Right)	1999
	Pretorius, <i>Outcomes-based education in SA</i>	1998
	Tiley <i>Implementing C 2005: some suggestions on classroom practice for Grs 1, 2 and 3 teachers</i>	1997
Documents which relate specifically to Resource Based Learning and LSMs:	Development of LSMs	No date
	DOE Generic guidelines for the development of learning support material for outcomes based education and training	1998
	COTEP Norms and Standards for Teacher Education	Feb 1996 currently in use
	DOE Technical committee on the Revision of Norms and Standards for Educators: Norms and Standards for Educators	September 1998 not yet in use)
	Access to LSMs in terms of language	
	Language-in-education policy	July 1997
	DOE Language-in-education implementation	1998
	DAC White paper on language: Preparing for a multilingual future	no date
DAC Language Plan for South Africa: The promotion and implementation of multilingualism	1999	
Access to resources and LSMs in terms of availability	DOE National Centre for Educational Technology and Distance Education: A National Policy Framework for School Library Standards	1998
	The Technology Enhanced Learning Initiative (TELI) policy framework	1998
	A National Policy Framework for School Library standards a discussion document	July 1997

This is by no means an exhaustive survey of available documents, but a fairly representative selection, given the time constraints of the research.

2.1 Lack of clarity

What emerges from a reading of the documents is a lack of clarity and consistency as to the nature and role of LSMs in the new curriculum, and a similar confusion as to the responsibilities of the different role players in terms of producing LSMs. What is consistent across the different documents is that LSMs in the new curriculum are framed in terms of a 'paradigm shift' from the 'old traditional system of education' which is characterised as teacher-centred, textbook and content based, with transmission styles of teaching and rote learning, to the new 'progressive' curriculum: learner-centred, resource based, with teachers acting as facilitators to learners' active learning in real-life, hands-on learning activities that promote creativity, problem-solving and critical thinking. Thus in some documents textbooks are juxtaposed and contrasted to LSMs in an either-or dichotomy.

In various documents, the terms 'resources' (Curriculum 2005: South African Education for the 21st Century), 'learning support materials' and 'resource materials' (DOE Curriculum 2005 Foundation Phase document, 1997), 'learning support material' (DOE Curriculum 2005: Lifelong Learning for the 21st Century, 1997) 'teaching and learning materials' (DOE Report of the National Committee on Further Education, August 1997) are used interchangeably. The Generic Guidelines for the Development of LSMs (1998) provide clarity on this matter but they post-date the curriculum documents to which we have referred. As Potenza and Monyokolo (1999) have illustrated, in the rush to implement C2005 some of the key processes of curriculum development with regard to LSMs have fallen out of alignment.

There is also a shifting perception of what comprises LSMs, including ambiguity across documents as to whether textbooks are expressly included as LSMs or not. This seems partly related to predictably shifting needs at different phases in the curriculum, but also to the underlying progressive pedagogical views that inform the curriculum.

2.2 Nature of LSMs

The DOE curriculum phase documents say little about the nature of LSMs. The Foundation Stage document refers briefly to the types of materials as: inexpensive pupil books if necessary, but no textbooks; a range of resources, provided in context; and readers and story books in the vernacular, as a priority. The Intermediate Phase document does not specifically mention LSMs and the Senior Phase document does not state what is envisaged as LSMs but provides a list of criteria for materials developers, which seems to imply an extended learning programme or textbook.

One DOE FET document refers to a 'shift away from rigid syllabi as well as from the primacy of the subject and level based textbook to the idea of a range of materials and media, appropriate to different contexts and learner needs.' (Report of the national committee on further education: a framework for the transformation of Further Education and Training in South Africa, 1997: 2-3) However, a later document refers to textbooks as the 'main resource in the FET sites of learning' and different from LSMs which 'will be designed to assist teachers and students on how to use current syllabi and textbooks in an outcomes-based framework' (DOE Strategic framework for reviewing and modernising FET programmes: working document 19 July 1999).

The supporting documents and material for teachers, including those that have been produced to inform teachers generally about the new curriculum (some produced specifically for use in workshops, and others produced by publishers), provide more information for teachers about what is intended in practical terms by 'LSMs.'

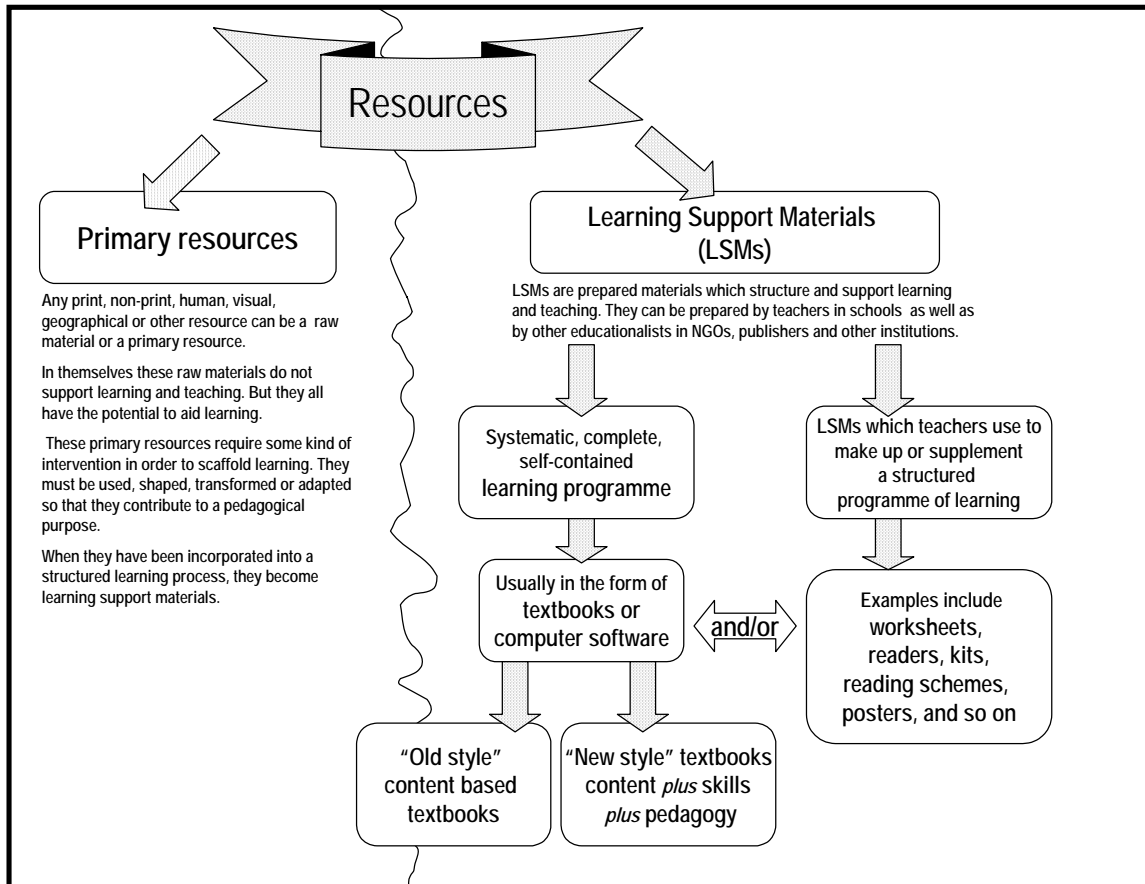
In a workshop booklet, 'educational resources' are defined broadly as 'almost anything,' including television/radio, video recordings, NGOs, newspaper education supplements,

learners, newspapers and magazines, bulletin board, charts, workbooks, published textbooks, audio tapes, fiction and non-fiction books, reference books, field trips, museums, community resource persons (DOE 1997: Curriculum 2005: South African Education for the 21st Century). A similar list is provided under 'learning support materials' in a DOE document, 'Outcomes Based Education in South Africa: background information for educators (1997: 48-49)'. It is prefaced with the statement that 'learning support materials *facilitate* the learning process' (original emphasis) and 'encompass more than mainly textbooks only' (sic). By contrast with the previous list, it includes: notes, supplementary readers, teachers' guides, models, specimens, toys, writing in Braille, and hearing aids, but does not include learners, NGOs, bulletin boards, charts, television and radio. Pretorius (1998) and Tiley (1997) provide very similar lists of 'resources': space (e.g. classroom, hall, library, soccer field, shade under a tree); manipulatives (e.g. bottle tops, cubes, boxes, rulers, scissors, beads); and print materials (e.g. magazines, newspapers, posters, textbooks). Interestingly, the chalkboard is not mentioned in any of the documents, as a resource or an LSM; nor are computers, the Internet or software packages.

Thus there appears to be a blurring of distinctions between resources, textbooks and LSMs, and a lack of clarity as to what these might mean. At this point it might be helpful to clarify what we feel are useful distinctions and definitions, to provide a framework for further discussion.

The most comprehensive DOE document on LSMs is the 'Generic guidelines for the development of learning support material for outcomes based education and training' (1998). This draws a useful distinction between resources, which have potential utility, and LSMs, which are defined as 'the means whereby resources are accessed for the purposes of learning.' It states, 'It is only when an educator has designed a teaching/learning strategy to access these resources to facilitate the achievement of learning outcomes that such resources become learning supportive' (pg 2). Similarly, in the PEI Report, Taylor and Vinjevoold (1999: 163) distinguish between materials which 'provide a systematic learning framework' and 'supplementary materials which are used in support of the systematic learning framework.'

We found both these distinctions useful in developing a framework that differentiates firstly between resources (the 'raw materials') and LSMs (the resources shaped to a pedagogical purpose). We then distinguish between LSMs that provide a structured framework for a systematic, developmental, complete programme of learning which can in effect 'stand alone' (such as textbooks or computer software) and does not necessarily require the intervention of a teacher and other LSMs which make up or supplement and a programme of learning (comprising, for example, worksheets) and do require the intervention or facilitation of a teacher. However these definitions are by no means watertight as a teacher could, for example, use a textbook as a resource, by using part of it to fit into a different programme of learning. We also choose to differentiate between textbooks ('old style') which are organised on the basis of content; and those ("new style") that aim to develop skills and attitudes as well as knowledge, and provide activities for learners to construct knowledge.



2.3 The role of LSMs in the curriculum

Wide-ranging claims are made regarding the role of LSMs in the new curriculum:

- ‘Adequate learning support material is essential to the successful implementation of the new curriculum’ (Curriculum 2005 Lifelong Learning for the 21st Century: A User's Guide, March 1997).
- ‘Learning support material should be viewed as an integral part of curriculum development and as a means of promoting both good teaching and good learning;’ ‘model appropriate teaching approaches and methods to guide less experienced teachers; and ‘promote a love for life-long learning’ (Generic guidelines for the development of learning support material for outcomes based education and training, 1998).
- The specifications for producing LSMs include reference to the values and skills of the new curriculum, activities to promote the pedagogy of C2005, and the need to couch these within an OBE framework and terminology (DOE Senior Phase Policy document, October, 1997).
- LSMs are envisaged as including support material for teachers as well as learners, encompassing the principles and practice of the new curriculum (Curriculum 2005 Lifelong Learning for the 21st Century: A User's Guide, March 1997)
- They should ‘empower practitioners to run learning programmes in a flexible, dynamic and learner-centred manner’ (DOE, Report of the national committee on further education, August 1997).

Thus LSMs are envisaged as supporting or even driving curriculum change.

2.4 Responsibility for producing LSMs

The mixed messages about textbooks and LSMs, extend to confusion as to who should be responsible for producing them. On the one hand, textbooks are negatively typified as part of the 'old traditional textbook-centred teaching methods': teachers were 'textbook-bound' (DOE, Feb 1997; MIET, undated); they 'slavishly followed textbooks' in what was 'an unhealthy situation' (Pretorius 1998). The corollary of this is the view of teachers as producers of LSMs, drawing on a wide range of resources – almost anything around them (Curriculum 2005: South African Education for the 21st Century).

The Generic Guidelines (DOE, 1998) acknowledge that teachers must both use and produce LSMs. They refer to 'the teachers' ability to identify the relevant resources, then design, adapt or so use them to produce effective learning support material' (page ref); and much of the curriculum training for teachers has focussed on producing learning materials. On the other hand, the Generic guidelines (and other documents such as the DOE Senior Phase Policy document, 1997) lay down comprehensive guidelines for the production of LSMs (which from the details are likely to be textbooks) and make suggestions as to how these should support and guide teachers' practice. They propose that LSMs can be produced by commercial publishers, formal support materials committees (provincial or regional basis), informal support material committees (eg teacher centre work groups, NGOs), knowledgeable individuals in the community, support material committees within schools, teachers, learners, parents.

However, there is no discussion of the balance of the different roles of user and producer, of how they might work together in teachers' daily practice. That this is not addressed may reflect underlying tensions in the curriculum: a critical view of teachers as creative, autonomous producers of LSMs, freed from enslavement to the textbook, somewhat at odds with the need to achieve observable outcomes using a pedagogy which makes heavy demands on teachers.

The draft Norms and Standards for Educators (DOE, 1998)⁹ position the ability to both interpret and produce LSMs as a key competence. One of the six roles of a teachers is: 'Interpreter and designer of learning programmes and materials' (p. v). The role is elaborated as follows:

The teacher will understand and interpret provided learning programmes, design original learning programmes, identify the requirements for a specific context of learning and select and prepare suitable textual and visual resources for learning. The teacher will select, sequence and pace the learning in a manner sensitive to the differing needs of the subject/learning area and learners. (p. 55)

The role is spelt out in terms of the following competencies:

Practical competencies:

- to consider a range of possibilities for action, make considered decisions about which possibility to follow, and to perform the chosen action.
- interpreting and adapting learning programmes so that they are appropriate for the context in which teaching will occur.
- designing original learning programmes so that they meet the desired outcomes and are appropriate for the age, language competencies, culture and gender of learning groups or learners.
- Designing original learning resources including charts, models, worksheets and more sustained learning texts. These resources should be appropriate for subject; appropriate to the age, language competence, gender and culture of learners; cognisant of barriers to learning;
- writing clearly and convincingly in the language of instruction.
- using a common word processing programme for developing basic materials.

⁹ At the time of writing we had sight of a more up-to-date version of these Norms and Standards, but they had not been officially published so we have not included them here.

- evaluating and adapting learning programmes and resources through the use of learner assessment and feedback. (pp. 73-4)

Foundational competencies are:

- understanding the principles of curriculum: how decisions are made; who makes the decisions; on what basis and in whose interests they are made.
- understanding various approaches to curriculum and programme design, and their relationship to particular kinds of learning required by the discipline; age, race, culture and gender of the learners understanding the principles and practice of
- understanding the principles and practice of OBE, and the controversies surrounding it, including debates around competence and performance.
- understanding the learning areas to be taught, including appropriate content knowledge, pedagogic content knowledge, and how to integrate this knowledge with other subjects.
- knowing about sound practice in curriculum, learning programme and materials design including: how learners learn from texts and resources; how language and cultural differences impact on learning.
- understanding common barriers to learning and how learning materials can be used to construct more flexible and individualised learning environments. (p. 74)

Reflexive competencies:

- reflecting on changing circumstances and conditions and adapting existing programmes and materials accordingly.
- critically evaluating different programmes in real contexts and/or through case studies both in terms of their educational validity as well as their socio-political significance. (p. 74)

The depth, range and complexity of these competencies is clear. It is not surprising that a study carried out by the University of Natal (in Taylor and Vinjevold 1999: 178) found that of the six roles set out in the Norms and Standards for Educators (1998), teachers' competence as 'designer of learning programmes and materials' is weakest. It is in creating LSMs from the range of resources available that teachers experience most difficulty.

In summary, although there is considerable confusion in the policy documents as to the nature and role of LSMs and the roles and responsibilities for producing LSMs, some points emerge

- LSMs are conceptualised as 'almost anything' and may include textbooks
- One of the central roles envisaged for teachers in the new curriculum is to interpret and produce LSMs
- There is ambivalence towards textbooks, which are part of the negative typification of the old system and pedagogy on the one hand; but on the other hand, are also detailed as guiding and supporting teachers' practice in the new curriculum.
- LSMs include materials that help teachers to interpret and enact C2005
- LSMs are considered central to teaching and learning in C2005 and to supporting curriculum change.

2.5 LSMs and Language

Language policy influences the conceptualisation of the curriculum itself and that of LSMs, and has implications for how LSMs are interpreted, produced and used. In multilingual societies - which our own policy documents remind us are the 'global norm' (DOE 1997i: 2) - policy makers have to wrestle with the challenge of providing linguistic access for all learners. This is especially important in a resource-based curriculum where learners use language to construct their own knowledge.

2.5.1 Language and access to policy

Some participants in the policy-making process have commented on the 'unquestionable status' given to English as the language to conceptualise the curriculum, and the ways in which this elevated 'one form of cultural expression at the expense of others.' (Hendricks and Samuels in Nekhwevha 1998: 27). Baxen and Soudien (1999: 134) note that issues of power, language and identity went unquestioned, and universalised notions of 'the teacher' and 'the learner' were constructed, which abstracted them from their socio-cultural and linguistic circumstances.

Given this process, it is not surprising that policy documents were written in English though some have been translated into other languages. The DOE, for example, has produced a booklet in which the language-in-education policy has been summarised in all eleven official languages. Some provinces - notably Gauteng and the Western Cape - seem to be ahead of others in translating policy documents. Potenza (1999: 234) reports that 'national exemplars' of LSMs for Grade 1 were translated into all the official languages for schools in Gauteng.

However, materials intended to help teachers understand C2005 and put it into practice (for example, supplements in newspapers) are almost exclusively in English. 'The Teacher' - a national newspaper, which plays a significant role in interpreting C2005 for educators - had this to say in response to a letter querying the exclusive use of English in supplements prepared by the GICD:

... as an English newspaper, The Teacher is unable to provide resource materials in all 11 official languages. Our policy is to produce all-English pull-outs which nevertheless take into account the need to encourage learning and teaching in the home language of the learner. (1998: 22)

There is some, albeit limited evidence to suggest that even where schools requested grade 1 and 2 LSMs in Afrikaans or African languages, they were supplied with them in English (Westphal 1999; GETC 1998) Potenza and Monyokolo state that 'particularly ex-DET schools did not receive sufficient numbers of learners workbooks in the required languages (1999: 234).' This creates particular problems with regard to young children learning to read. As one principal put it: 'This confuses learners who are being introduced to phonics of isiSwati and using workbooks with English phonics.' It is a problem with the numeracy and lifeskills LSMs as well: 'This creates a burden for the teacher who has to translate these workbooks into isiSwati. (Mnisi 1999)

Another aspect of access, is the language and associated ideology of C2005, in particular the complex, technical terminology used to describe OBE. Jansen has described it as 'a curriculum discourse completely foreign to teachers' understanding and practices' (1999: 7) and in his view, 'the single most important threat to the success of OBE as a curriculum innovation' (p.9). Gauteng teachers (DoNE 1997; GETC 1999) have complained that that the language and terminology of OBE is 'incomprehensible' and 'undermined their confidence'. And in an evaluation of the Grade 1 Pilot in the Western Cape (WCED 1998) teachers were asked: 'What was a problem about the curriculum for you?' 30% complained about the terminology and register saying it was inaccessible, and 17% were unhappy that the documents were only provided in English.

2.5.2 What the language-in-education policy documents say about LSMs

The main guiding document - 'Language in Education Policy' - makes no reference to LSMs. Nevertheless, its position on language has implications for their development and use. In principle, it acknowledges that language affects access to education and plays a role in conceptual growth; it recognises that there may be 'mismatches between home languages and languages of learning and teaching'. For this reason it recommends a policy of 'additive

multilingualism', which provides a firm foundation for conceptual development (p. 4). In line with the Constitution, it promotes the development of all official languages, the teaching and learning of other languages, and the development of programmes for the redress of African languages.¹⁰

The phase documents reiterate this position. In the foundation phase, for example, multilingualism is included as a key aspect of the OBE Approach (p. vi). It is described as a major resource, which affords learners the opportunity to develop and value the cultures and literacies of their own and other languages, and to develop a shared understanding of a common South African culture. However, in the 'Language in Education Policy' document these goals are tempered with the proviso that multilingualism is to be achieved through 'cost-efficient and effective mechanisms' (p.6) reflecting the Bill of Rights where language rights are defined as qualified rights which take into account 'practicality and 'expense' (Brown 1998: 5).

In practice the responsibility for implementing this policy has been devolved to School Governing Bodies (SGBs)¹¹ In a statement accompanying the New Language Policy, the Minister of Education required 'each school governing body to announce the school's language policy, and to state how it will promote multilingualism through a variety of measures' (1997: 2). However, the DoNE does not force particular languages or approaches to multilingualism on schools, allowing for sensitivity to local circumstances. The minimum legal requirement is that schools offer more than one official language as a subject.

Brown (1998: 8) points out that the decisions of SGBs will shape the future of educational publishing and have implications for the availability of books in languages other than English:

While it is true that a market involving choice will emerge in language publishing, it must also be remembered that publishing in African languages is vitally dependent on the choices made by school governing bodies; the future of Afrikaans educational publishing will be similarly affected.

The 'Language-in-Education Implementation Plan' responds to the multilingual spirit of the 'Language in Education Policy'. It takes a strong position on additive multilingualism and argues that language learning 'should be integrated into all learning processes' (p. 15). With this in mind it makes the following statement with regard to materials development:

The development of materials for language learning in an outcomes-based paradigm is new to South Africa. Most of the materials currently available are based on the existing content-based syllabi, and cannot be used to facilitate language learning in a new paradigm.

It claims that new materials which have been developed 'focus on learning in one language', and it argues for the development of multilingual materials. It also draws attention to the important issue of literacy, stating that 'Bilingual programmes should focus on providing literacy skills in the home language, especially where parents speak little or no English (p. 12).'

The 'Language Plan for South Africa' includes specific plans for developing African languages. Of particular relevance to LSMs, is the establishment of National Lexicography Units whose responsibility it will be 'to compile a comprehensive dictionary for each of the languages' (p. 15).

2.5.3 Implications of language-in-education policy for our conceptualisation of LSMs

In spirit, the language policy documents suggest implications for LSMs: that LSMs and reading materials will be required in a number of different languages and, at the very least, that bilingual/multilingual glossaries and dictionaries will be needed. The Foundation Phase

¹⁰ This policy is in line with the 'White Paper on Language' and 'Language Plan for SA.'

¹¹ Section 6(1) of the SA Schools Act, 1996.

documents referred to on earlier specifically state that 'readers and storybooks in the vernacular should be seen as a priority (1997: xiv)'.

However, in practice many SGBs are choosing English as the single language of learning and teaching (for reasons suggested earlier), and the use of African languages for this purpose is declining (Brown 1998; Vinjevold 1999). Brown notes: 'The full development of indigenous languages as languages of learning remains an aspiration only (1998: 2).' Given this situation, and the high cost of producing books in a variety of different languages (McCallum 1995: 139) it is unlikely that publishers will risk publishing textbooks in African languages. Some have already had their fingers burnt publishing readers, storybooks and main language courses in African languages.

It would be feasible for publishers to include multilingual glossaries in textbooks and some, in fact, do so. There is great potential for producing multilingual materials using computer software since it has the flexibility to allow for interactive translations in a number of languages. However, the cost would be prohibitive for most schools. Further research is also needed into the value of glossaries and translations. What little has been done suggests the matter is not straightforward (Lockett 1990).

If the trend in school language policy continues unchallenged, then teachers will need to create their own multilingual LSMs using readily available resources such as the chalkboard¹². There is considerable scope to do this, but research suggests that teachers are generally reluctant to produce their own LSMs and will need in-service support (Wickham & Versfeld 1998). Furthermore, it will be an enormous challenge for the majority of teachers (speakers of African languages) to achieve the competences related to their role as 'interpreters and designers of learning programmes,' especially when these competences originate in a foreign discourse (Jansen 1999; Harley & Parker 1999).

It should be clear from this discussion of language policy, that language is an important factor in the curriculum generally, and particularly with regard to LSMs. However, one should not lose sight of the fact that it interacts in complex ways with other factors. Writing in 1995 from the perspective of educational publishing, McCallum pointed to the interplay of different factors and the need to keep them in creative tension.

Language policy, curriculum policy, the pace of educational reform, the financing of education and the political climate in which all of the above operate are ... closely linked ... It is of vital importance that they be considered holistically, and that the necessary balance of 'creative tensions' is achieved before policy is implemented (1995: 139).

We can conclude from this discussion:

- Resources/capacity influence whether or not teachers get LSMs in their chosen language.
- Language choice affects teachers' capacity to interpret and produce LSMs.
- The devolution of powers to SGBs will influence publishing of LSMs in languages other than English.
- These factors further disadvantage learners who are already disadvantaged.

3. LSMS and Access

As we have said earlier, access to resources and capacity frame policy. Both are critical to understanding the link between policy formulation and the ways in which it is interpreted and

¹² As we have already noted, the chalkboard is rarely mentioned as a resource.

enacted. Access refers both to the availability of physical facilities – such as books and computers – and to the intellectual capacities needed to utilise them.

We will examine the intellectual dimension in more depth in Section 4. Here we focus on the need for physical access to LSMs. As we have suggested, although the need for resources in C2005 is acknowledged, their extent tends to be underestimated. In a recent evaluation, for example, teachers were criticised for their belief that ‘volumes of resources’ are needed to implement C2005 (WCED 1998). The evaluators saw this as a ‘misconception ... that will have to be dealt with sensitively especially during this time of diminishing resources.’ Our earlier discussion of resource-based learning indicates otherwise. We would suggest that there is a minimum level of resources needed – both physical and intellectual – and both require financial investment. A recent statement by the Minister of Education supports this view:

One of the critical factors that has been identified for learner and teacher performance is the availability and effective use of adequate and appropriate support materials. (Asmal 1999c)

This section makes several key points about access to LSMs: These are:

- Access to adequate materials is a basic requirement of learning.
- Access requires actual availability of resources.
- Access means appropriate materials are needed.
- Access to technology is an issue.
- Access inevitably means expenditure.
- Access is not enough i.e. access to appropriate materials is a necessary but insufficient condition of learning and the achievement of the goals of C2005.

3.1 Access to adequate materials is essential to successful educational outcomes

Policy documents recognise that ‘Adequate learning support material is essential to the effective running of the system (DoNE 1997e),’ and international research is acknowledged:

The international literature suggests that some of the most important predictors or precursors of actual cognitive development, as opposed to simple access to schooling, is the access of learners to learning materials such as books and stationery, along with the availability of school libraries (Crouch and Mabogane 1997:13)

International studies over the past thirty years consistently point to the need for adequate materials for effective schooling, and in particular emphasise the role of LSMs in achieving successful outcomes in developing countries. It is worth a closer look at some of this research as no large-scale studies have been done in South Africa.

These studies point to the difficulty of isolating LSMs as single factor in improving learning outcomes. A recent publication by Ward Heneveld and Helen Craig emphasises the need to consider their role in the context of the whole school. They point to the limitations of input-output, efficiency models (of the kind that has characterised much World Bank research) and stress the interrelatedness of factors:

... textbooks, will be used more effectively where there is good leadership, when everyone knows the curriculum where there is a stable teaching force, and when the school head has flexibility in how he or she manages the schools.

The importance of good teaching and governance is a point we shall return to later. The complex interplay of factors makes it difficult to generalise conclusions about what makes a school effective. However Heneveld and Craig suggest:

... the common findings across settings and using different analytical techniques suggest that effective schools are characterised by the factors identified previously. When these factors work together they improve student achievement (1996: 13).

They note that researchers such as Huberman and Miles (1984), and (Fullan 1991) identified adequate resources as one of twelve key organisational factors characteristic of effective schools . A more recent study lists four necessary basic inputs, the first of these being instructional materials such as textbooks, supplementary guides and library books (Levin and Lockheed 1993 *ibid* .12). There has been less school effectiveness research in developing countries; however, Heneveld and Ward (*ibid* 1996 p.15) refer to a study in Madagascar which found that the most significant areas where government could make a difference were community participation, school leadership, teacher guides and textbooks.

The impact of the textbook has been found to be far greater in developing countries, compared with developed countries where they are plentiful, and where factors such as family background play a greater role. Several authors¹³ claim that children in developing countries who have access to textbooks and other reading materials learn more than those who do not. A local study of the effects of provision of workbooks to learners in the Northern Cape, found those in disadvantaged schools benefited most (Vinjevold 1996, quoted in *Getting Learning Right* p.168). Textbooks are said to be the most important LSM and particularly effective when used with guides.¹⁴ The provision of additional resources such as paper, pencils, chalkboards, chalk and posters also facilitate learning. (*ibid* p.20)

Little research has been done into LSMs other than textbooks. A formative evaluation of a C2005 project suggests that teachers will require access to more resources and have to make a greater investment of time to create the necessary LSMs:

...Learning Programme Unit development requires the teacher to do more research and to spend more time on planning than before; it also requires greater access to a range of resources.' (RUEEU, 1997:27)

As we have already described, state funds available for such resources are diminishing and parents and the community are required to play a greater role in acquiring them. The danger is that the gap will widen between schools with SGBs that have access to resources and ability to fund-raise, and those with little of either.

The next section outlines the current situation regarding availability of LSMs and resources in South African schools.

3.2 Access means available

The Schools Register of Needs is often quoted as stating that 48% of schools are adequately supplied with textbooks. While it does note that there are substantial variations between provinces there are problems in accepting this figure for LSMs:

- It only refers to textbooks, not the gamut of other resources and LSMs required for the implementation of C2005
- The figures were collected in 1995 before Grades 1 and 2 of C2005 were introduced necessitating the complete replacement of books for these grades.
- As the years pass a backlog of books for those grades is building up, as additional materials are not being purchased due to reduced spending.
- Since 1995 expenditure on books has dropped by up to 80% overall which means that the usual 'top ups' have not been bought (i.e. replacements for lost/damaged books throughout the system)

¹³ These include Farrel 1989; Heynemann Farrel and Sepulveda-Stuardo 1981; Heynemann and Loxley 1984; Lockheed and Vespoor and Associates 1991

¹⁴ However, this must be contextualised within our discussion in Section 4 of this Report.

A more recent pilot study using a sample of over 900 schools (a mix of urban, peri-urban and rural, but none too distant from roads) is reported by Bot (1999). The findings must be treated with caution and cannot be generalised. With this proviso, findings regarding the availability of instructional materials are summarised below. Of note is the fact that nearly every classroom has a chalkboard and chalk, yet this resource is barely mentioned in policy and curriculum documents. The next most commonly available LSM is the textbook. The high figure in this regard probably relates to the size of the sample, and the fact that remote schools were not included in the pilot. Bot describes the findings as revealing 'serious backlogs in respect of instructional and learning material.' She particularly notes that 'Four out of ten primary learners did not have textbooks in all subjects.' As can be seen from the table, there are provincial disparities. Most shortages in respect of learning materials were found in the E Cape and N West. Nationally, roughly six out of ten teachers said this limited their teaching, and the absence of LSMs was one of the reasons given by teachers for lost days of teaching.

Availability of instructional materials		
LSM	% of teachers who have	Range*
Chalkboard	94%	85-100% (EC-GT)
Chalk	95%	83-100% (EC-WC)
Wall chart	59%	43-82% (NW-NC, WC)
Maps	42%	35-61% (KN-WC)
Cupboard	73%	50-99% (MP-NC)
Book shelves	49%	27-74% (EC-WC)
Textbooks	72%	59-88% (EC-WC)
Stationery	82%	58-94% (EC-NP)
Dictionary	46%	31-72% (EC-WC)
Teachers guides	53%	40-84% (NW-WC)

* This represents the provinces with the lowest and highest proportion of teachers respectively who have these materials

Source: Bot, M. 1999. Edusource Data News, p. 3.

A disturbing fact revealed in the table above is how many teachers in this pilot study did not have access to teachers' guides, and the provincial disparities in this regard. If this is the case generally, it will mean that teachers do not have access to the LSM which explains the methodology of new materials. A similar problem seems to be emerging with regard to learners' handbooks (DoE 1999b:3). Some provinces have ordered teachers' guides and workbooks but not learner handbooks, yet in many courses the latter is the most important component which contains the resources for learning. It would be better to economise on workbooks, which publishers regard as an (expensive) optional extra. Some provinces no longer fund workbooks for this very reason (as exemplified in the KZN fax quoted in the section on Expenditure below).

MacCallum (1999) estimates that between 10% and 30% of the textbook requirements of South African school-going learners are currently being met and that about R1,2 billion is needed annually for basic textbooks excluding teachers guides, supplementary readers and so on. This figure was calculated by identifying for each grade the range of subjects (currently a mix of the old and new curricula), where applicable a book for each subject, multiplied by the average price of a book for that subject at that grade (using an average of the five largest publishers prices) multiplied by the latest enrolment figures by grade and subject. Adding up these requirements by grade the total came to R4,7 billion in October 1998. If this amount is amortised over four years or if 25% of the books are replaced each year (giving each book a life span of four years) then the annual level of basic provision is R1, 175 billion (rounded to R1, 2 billion)

Issues of availability extend beyond the state's provision. Parents are increasingly buying school materials for their children (Bot & Schindler 1998, Czerniewicz 1999b) but are hampered by the lack of retail outlets. Because there is no policy in this regard, few delivery mechanisms exist to support it. Parental buying with the appropriate support systems exists in Kenya and Zimbabwe, and Lesotho has a scheme where parents pay a quarter of the book price through a four-year rental scheme for textbooks. Book returns are assured (a big problem here) by the fact that parents are liable for the full price of the book if they are not returned at the end of each year.

Availability of learning resources in the home is also an issue (Zinn, in Hart 1999). Bot reports the following findings from the study described above. She concludes that, 'Due to the lack of resources at home, resources such as libraries, radios, etc. need to be provided at school in disadvantaged areas (p. 3).'

Resources available at learners' homes		
	Primary	Secondary
More than a few books	26%	42%
Electricity	62%	73%
Own study desk/table	44%	53%
Television	67%	81%
Calculator	N/a	85%
Computer	N/a	16%
Dictionary	N/a	80%

Source: Bot, M. 1999. Edusource, No. 26, p. 2.

Time is also a factor in availability. While late delivery of textbooks has received a lot of attention, there have also been problems with the availability of C2005 materials. In the pilot programmes for grades 1 and 2 and grade 7, most teachers received the required LSMs. however, there were some problems with distribution to and within schools; some LSMs were insufficient or delivered late or in English instead of the requested language. Potenza and Monyokolo (1999: 234) report that, 'only two provinces - Western Cape and Gauteng - purchased new learning materials for Grade 1 learners in 1998 and managed to deliver them to schools in time to support the implementation of the new curriculum [their emphasis].'

As has been discussed, availability is only one factor, school management is another. Research from Zimbabwe comments on the management of science equipment in rural schools:

Even when materials reached schools, they were generally shabbily handled and many schools' teaching equipment and chemicals were found stored in alarmingly disordered conditions, clearly posing a health risk. This neglect of resources by teachers is a serious issue of concern and raises questions about the ability of rural science teachers to sustain a meaningful science curriculum. (Hungwe 1994:89).

The GDE/GICD LSM task team (199:17) described the improvement of school level management as a first priority, and the cheapest and soundest way of effectively increasing the LSM budget.

Availability of LSMs and other resources to individual learners through schools and at home are not the only ways of providing them with access. Other possibilities (and indeed requirements) are school and public libraries.

3.2.1 School libraries

As we have already discussed, school libraries are necessary for the resource-based approach of C2005. As Lor (1998) put it:

The introduction of C2005, which emphasises resource-based and learner-centred learning, makes students more dependent than ever before on school libraries and media centres.

The deterioration of school libraries and media centres poses a grave threat to the success of Curriculum 2005. (Lor 1998:1)

A rural teacher who set up a library in a remote part of the Transkei put it more bluntly when he said that the new system 'will never even move without a library'. (Jujuju, quoted in *The Teacher/Edutech Puisanao* 1999: 12). Internationally, libraries have been found to be an important determinant of the quality of schools (Heneveld 1996: 20), and locally, use of a library is included in the quality indicators being developed for South African schools (Bot 1999: 12).

In addition to being necessary on pedagogical grounds, school libraries can also be cost effective. From an international perspective, Samoff (1994) reports:

Among the most promising responses to economic constraint have been those that envisioned supporting even extending education services by making more effective use of the reduced resources available ...Effective school library services can make a limited number of books available to a large number of readers (Samoff 1994:20).

However, library resources alone are not sufficient to improve teaching and learning - a teacher librarian is also needed (as the draft school library documents point out). The presence of someone to manage learning resources is regarded as crucial in both international and local research (Hart 1999: 57).

Yet indications are that school libraries in South Africa have suffered a serious decline since 1994. A School Library Audit is presently being undertaken with the findings due in March 2000. At present, the facts are incomplete and fragmented.

Expenditure on school library books falls under Media Collections. This table extracted from Expenditure on Fixed Assets for the 1997/98 year (Bot 1999:36) shows the expenditure on media collections, a category which includes library books, journals, records, transparencies, computer programs, video tapes and other media items excluding apparatus and school books.

Province	% of schools with library facilities 1996	% of schools with adequate media collections 1996	% of schools with adequate media equipment	Media Collections Expenditure 97/98	
				Rands	%
Eastern Cape	7	4	3	216	0,0
Free State	12	18	7	0	0,0
Gauteng	44	24	21	906	0,0
KwaZulu Natal	18	9	6	19 540	0,3
Mpumulanga	15	6	5	0	0,0
North West	33	7	5	20 742	0,6
Northern Cape	5	2	19	1 679	0,2
Northern Province	14	2	2	16 034	0,3
Western Cape	52	11	8	170	0,0

In addition the following information has been found or observed:

- Most South African schools do not have functional school libraries, and those which do tend to be in ex white, coloured and Indian schools. Many librarians in these schools have been retrenched over the past few years. A provincial official in the W Cape estimates that in the 1881 schools in the province there are under 100 school librarians left.
- Similarly an October 1999 fax from Mpumalanga Province states, 'Many good school libraries have been closed due to rationalisation and redeployment of staff.'
- A fax from the Northern Cape's Kimberley regional librarian (18 Oct 1999) states:
To my knowledge there was no budget for school libraries in 1997 and 1998.

An amount of R900 000 was budgeted for 1999 but no money was used except for S&T for our Provincial meetings. Currently the whole process of establishing a school library structure is on hold...Due to the lack of a formal structure there is a difficulty in determining the state of school libraries. There are school libraries in quite a few of the ex Model C schools but that libraries are usually established by the schools itself with no support whatsoever from the department.

- Publishers used to publish local non-fiction for the local school library market with assurance that at least 2000 titles would be purchased. This has been discontinued over the past few years due to lack of purchases (MaCallum pers. com 99); it has serious implications for the growth (or decline) of children's literature in South Africa.

Lor describes the situation of school libraries in KZN as a typical example, thus giving a sense of the situation nationally:

...this department has received no budget for book purchases during the past two years. Of 5400 schools in the province about 900 have library buildings or facilities of some sort. However only 2% have libraries which can be said to be adequate. Such collections that other schools have are either in tatters or unusable. None of the state schools in the province have school librarians. Some of the formerly white schools had good libraries and employed teacher librarians but these have now been allocated to teaching duties only and libraries are being neglected

While the results of the Audit must be awaited, there is enough evidence to show that libraries are not keeping pace with the requirements of resource-based learning in C2005, unlike other parts of the world where school libraries and personnel are considered the third essential leg of resource-based learning.

The draft school libraries document provides a realistic response to a difficult situation. It draws attention to the need to recognise the role of the school library in the resource-based curriculum envisaged by C2005. It acknowledges that this must be a long term goal but proposes that the situation needs to be improved incrementally by means of short-term goals. It suggests that qualitative benchmarks for library provision are:

- Every school conducts an assessment of the school community's cognitive and curricular needs.
- There is regular evaluation of library based resources.
- Departmental funding for library based resources must be available.
- Library based resources have to be included in annual budget of schools.
- Educators and learners must be provided with access to library based resources.
- At least one educator must be responsible for managing the library, whichever model is chosen.
- A system must be in place to replenish library based resources.
- There needs to be access to an advisory service.
- There must adequate space to access library based resources.

While mindful of the existing conditions in most schools, the document suggests minimum standards and provides an array of models of school libraries, suggesting that schools can choose one suitable for their circumstances. It suggests maximum flexibility with constant improvement, aiming for every school to have its own library¹⁵.

¹⁵ It is of note that READ has successfully developed a classroom based book box library system which is supported by classroom based support and long term training.

3.2.2 Public libraries

It has been suggested that the shortage of resources at disadvantaged schools need not stand in the way of the development of information literacy (Zinn in Hart 1999:57), provided that four¹⁶ conditions prevail, the first of which is that learners have access to a public library. This may be the case, but it does not take into account the plight of learners in rural schools, or the pressure this will place on public facilities.

Indeed as the need for resources becomes more acute, so pressure on all institutions making them available becomes more intense. This is the case in all provinces. In the Western Cape evaluation report, teachers make frequent reference to the need for good library services (WCED 1998:42). Similarly, in the pilot study reported by Bot, teachers referred to libraries as one of the things needed to improve learners' performance. In Mpumalanga, Sam Ndawo, Head of Library and Information Services of that province's DOE said that few schools in the province were equipped to support C2005, which requires extensive resources such as modern libraries and science laboratories. In his view, close co-operation between schools and public libraries was essential (Edusource No 21 July 1998)

In a Memorandum, Lor (1998) describes how public libraries are becoming sites of support for C2005 wherever they can be found:

As existing school libraries/media centres deteriorate/close down, more and more students become dependent on public libraries for the supply of materials for their assignments. For example the Natal Society Library [in Pietermaritzburg] is visited by over 4700 per day most of the secondary and tertiary students using the library for educational purposes. (Lor 1998: 2)

The Memorandum was followed by a more structured investigation of the nine Provincial Library Services (PLSs) and the ten Independent Public Libraries (IPLs) by Leach (1998). The Hooper Report (1999¹⁷) comments that Leach's findings are substantiated to a large degree by the subsequent work and comments of Hendrikz (1998) and the earlier work of Hansen (1996) and Gericke (1997). It is therefore worth spending some time looking at Leach's study.

Leach found that public libraries were increasingly focusing on education, with the public library service becoming responsible for school and government department libraries. Reasons given were:

The need to have a holistic approach in addressing post-apartheid imbalances, to improve access to budgets, to improve lines of accountability and the need to have a unified voice to push the library agenda provincially. (1998, p. 10,11)

He found that public libraries were focusing more on the students and stocking literacy materials and 'vernacular literature'. Sometimes this was seen to be to the detriment of the traditional user. In one instance a Reference Library had become a 'study centre' and a shortage of space was reported. At a community library it was reported that '200 to 400 persons are searching for study places daily ... and the influx of students ... is keeping other reference library users away' (*ibid* 13). All the libraries were involved in literacy promotion in some capacity, and although in most cases there were no formal linkages between public libraries and schools, they were supporting the curriculum:

¹⁶ The other are: that there are some information sources at home; that teachers are resourceful exhibiting information literacy traits and that there is an augmented idea of what constitutes a resource so that it is not limited to books.

¹⁷ The extracts and summaries of Leach's report are quoted from the Hooper's August 1999 report and bibliography. In addition to interviewing 12 senior people in library services nationally they summarised and put together a bibliography of all materials on public library provision since 1995.

... given the serious lack of libraries in schools ... affiliated libraries are playing an increasing role on supporting formal education ... The result is a swamping of community libraries by students in search of study materials.. Despite the obvious pressure and expense .. little or no responsibility appears to be borne by the educational authorities. (p. 14.)

The funding situation for public libraries is extremely tight. Leach reports that this has resulted in

... negative effect on service deliveries ... cut backs on library and information material delivery to affiliated libraries ... cuts in purchase of materials ... no building of new libraries in townships and rural areas ... inability to provide provincial (statutory) subsidies to the (independent) municipal libraries, networking plans with schools not being realized, aging and irrelevant book stock, less training, fewer professional visits and monitoring, inadequate and insufficient information technology, lack of research and an inability to effect 'meaningful transformation. (p. 6)

One librarian describes the situation in her province as ' a tap without water'.

Similarly the staffing situation is a problem. Posts have been cut, frozen or are vacant because of lack of funds. When asked about the affects of this respondents said it prevented them from providing a service and resulted in tired and demotivated personnel. In the case of Mpumalanga, there is no-one to process material purchased since 1997, and so it is unavailable to the public.

The issue of user fees as a potential source of income is almost universally rejected:

The issue of user fees is a complex and, in the South African context in particular, a politically sensitive one as well ... One PLS noted that the issue was not applicable. Six of the remaining eight PLSs were categorical in their rejection of user fees ... One of the reasons given by respondents was the need to bring about equity and address past imbalances – 'The poor will be deprived of a service they so desperately need ... Four of the IPLs were quite emphatic in their rejection of user fees as an alternative source of funding ... One pointed out that 'the income generated from user fees is minimal in comparison with our expenditure' while a second noted that 'Funds generated this way form 1% of the Library's total expenditure. (p. 7, 8.)

While Leach commends the library Service for the way in which it is transforming (1998, p. 18), he also observes that 'It is clearly becoming increasingly difficult (if not impossible) to achieve redress let alone maintaining existing services.' Yet while the system is stretched to he limits in urban areas, rural areas are in a much worse position due the virtual lack of public libraries altogether.

3.3 Access to technology

Despite the low level of technology in schools, the issue is still relevant to a discussion of LSMs because:

- While the majority of ICT¹⁸ related projects occur presently in the higher education sector it is reasonable to assume that this will 'seep' down through the schools, first to FET and then GET.
- Computer related educational projects are closely associated with resource-based learning, and computer literacy is one of the literacies specified in C2005
- Technology is considered a potential way of reducing costs and improving access in the medium to long term
- If C2005 is to achieve its aim of developing information literate citizens then improved access to technology together with the associated information literacy skills will become an increasing priority that will have to be addressed.

¹⁸ information and communication technology

Technologies in education are used in several ways¹⁹, the most relevant one here being the support of learning and teaching through a range of technologies from the simplest chalk and board to the most complex science equipment and computer software. There are many examples of failed technology in education projects where key decisions were made on the basis of technological rather than educational criteria. Decisions should thus be made on how that technology will best serve the required educational objectives (DoNE no date a).

For many schools this is a hypothetical decision at present as the facts below indicate.

3.3.1 The facts about computers and other technologies in schools

While there are now 1.04 million Internet users in South Africa , connectivity in schools, and indeed actual computers in schools is minuscule as the table below indicates.

¹⁹ The two main other ways are to support management, administration and the organisation of educational institutions and to develop and disseminate resources such as broadcasts, radio programmes or information via the Internet

Computers and telecommunications in schools, April 1998²⁰

Province		Schools with two or more computers		Schools online		Schools with grid electricity		Schools with exchange line telephones		Schools with telecommunications potential -electricity, telephone line, computers	
Name	No of schools	No.	%	No.	%	No.	%	No.	%	No.	%
Western Cape	1881	501	26,6	201	10,6	1,563	83,0	1,554	82,6	498	26,4
Gauteng	2437	568	23,3	119	4,8	1,947	79,0	1,899	77,0	566	23,2
Eastern Cape	5945	200	3,3	90	1,5	1,095	18,4	1,100	18,5	197	3,3
KwaZulu-Natal	5259	340	6,4	51	0,9	2,037	38,7	1,854	35,2	331	6,2
Free State	2899	149	5,1	12	0,4	1,202	41,0	724	24,9	146	5,0
Mpumalanga	1990	110	5,5	6	0,3	965	48,9	704	48,4	108	5,4
Northern Cape	531	99	18,6	3	0,5	413	77,7	401	75,5	97	18,2
North Province	4179	37	0,8	-	-	876	20,9	1,302	31,1	23	0,5
North-West	2419	104	4,2	1	0,0	1,008	41,6	861	35,5	101	4,1

The figures above are based on the Schools Register of Needs, which was conducted in 1995. A more recent study, the National Audit of Computers in Schools has been commissioned by the National DOE and is presently being completed by UWC's EPU.

The Audit divides schools into those with and without computers. With regards those with computers, provisional observations from the Audit include the following:

- Schools in provinces such as Gauteng and Western Cape appear to have better ICT facilities and more up to date computers on average than schools in the Eastern Cape and Northern Cape.
- Schools in the Orange Free State, KwaZulu Natal, Mpumalanga and the North West Provinces hold an intermediate position between the two extremes.
- There are however clusters of schools in each of the nine provinces whose resource endowments exceeds the national average. It is likely that these schools were either classified previously as Model C schools, or are presently independent schools.
- Generally schools that offer Computer Studies as a school subject make greater use of ICTs than schools that do not. In addition to possessing a large number of computers, such schools also tend to be better connected to the Internet.
- Schools in the Western Cape and Gauteng are in a more favourable position in terms of Internet connectivity; nearly half (49%) of the schools in the two provinces in the Survey have access to the Internet.
- Only 10% of schools in the Survey indicated that none of the learners at the school have access to a home computer²¹.

²⁰ The table is a synthesis of information gathered by Stephen Marquard at SchoolNet in March 1998 with figures extracted from the Source: Schools Register of Needs, HSRC / Department of Education, 1996. <http://www.school.za/research/cs98drft.htm> as well as information from Bot, M 1999 Macro-Indicators 1997: Update of Base line Study

- Information gathered about costs include the fact that average Telkom costs per school are R398.96, with a high variation (range is R5994) and significant differences between for each province; and that the ISP costs are an average of R493.37 (but a range of R8999 and significant provincial variation).

There is evidence of improved infrastructure since 1996; those schools without computers, responded that, since 1996:

- 48.8% had acquired electricity,
- 44.7% had acquired telephone lines and
- 22.6% had acquired additional classrooms.²²

Schools without computers may have limited access to other technologies as these provisional findings from the Computers in Education Audit show.

	Primary Schools (n=281)	Secondary Schools (n=101)	Combined schools (n=58)	Total Schools (n=430)
Televisions	18.1	30.7	39.6	23.5
Computers	3.2	6.9	10.4	4.9
Video/ cassette Recorders	15.3	24.8	33.3	19.5
Radios	8.2	14.9	18.8	10.9
Wind-up radios	2.5	2	2.1	2.3
Overhead projectors	26	26.7	45.8	28.4
Slide & tape recorders	4.3	8.9	8.3	5.8
Tape recorders	16	15.8	20.8	16.5

As well as technology within schools, learners also have access to technology in the 600 or so telecentres in the country. Of the 201 centres reached in a 1998 study, 30% have email, 66% have computers, and 87% have telephones. Even in rural areas 18% have email, 44% have computers and 73% have telephones. These centres offer advice, business support training with particular requests for information resources in general, financial information, legal advice, NQF info and educational training materials.

3.3.2 Key issues regarding computers and other technologies in schools

3.3.2.1 Discrepancy of access

The figures above highlight the discrepancies of technological access between the most advantaged schools and the majority of disadvantaged schools, as well as between the more wealthy and the less wealthy provinces. Even those schools described as having telecommunications potential form a small percentage of the total number of schools in the country. For many the lack of electricity, security and so on makes the use of computers unrealistic. In addition, many educators have little experience of high-tech technologies and thus may not be in a position to make informed decisions.

3.3.2.2 The 'impact gap'

There is a gap between what technology can do and what users will actually use. As the Shoma Report (SAIDE 1998) and Multichoice (SAIDE 1998) findings indicate, even those teachers with

²¹ At about 70% of the schools, there are some learners at the school who have access to a home computer. At roughly 20% of the schools surveyed, more than half of the learners at the school have access to a home computer. These breakdowns include learners at secondary as well as primary schools.

²² *ibid.*

access to computers are often intimidated and may not have the time to fully exploit Internet research options.

3.3.2.3 Lack of local content

While the lack of educational content on-line has also been remarked on in the general and further education bands, there is increased activity taking place in the development and dissemination of local educational content, including Cyberschool, The Learning Channel, Edutech Piusano and the work of the Shoma Foundation.

3.3.2.4 Quality of courseware and technology-enhanced materials

The issue extends beyond availability of on line content to the quality of the materials produced. In a recent South African report, Butcher states:

In many cases where technologies are being used to support or enhance learning, high quality learning materials are conspicuous by their absence. Often, the use of technologies is not accompanied by any materials development processes at all. This is particularly strange because it seems that this very traditional approach to using technologies to enhance learning adds cost to the teaching and learning process without any particular benefits (1998).

Similarly it has been found that local web sites and technology-enhanced materials have not yet included any real support for information literacy education in their development, despite intending to. Developing good quality appropriate on-line materials, costs money as does the development of all learning materials:

The successful introduction of technologies into teaching and learning environments depends on high quality course materials. Unfortunately, however, inadequate attention, time, and money are generally devoted to the design and development of such course materials. In order to change this, it is necessary to redirect significant funds to course design and development processes. (Ministerial Committee for Development Work on the Role of Technology that will Support and Enhance Learning, 1996, Pretoria, quoted in Butcher 1998)

These issues and those related to the development of appropriate quality materials are explored in more detail in the section on appropriate materials that follow.

3.4 Access means appropriate

Whether LSMs take the form of print-based material in schools or public libraries, or by means of computer technology, they must be suitable to the context, to learners' ability and to teachers' competencies. Good quality LSMs meet the objectives of the curriculum; are effective in the context in which they are used, provide scaffolds for learning; and support the teacher in terms of methodology. The appropriateness of LSMs for teachers and learners will be explored in more depth in Section 4.

Perhaps more even than conventional LSMs, those used to support resource-based learning need to be very carefully prepared and structured. Materials preparation and development costs a great deal of time and money, and requires skilled developers as well as a vibrant and active publishing industry. The materials themselves require careful and thoughtful design, sufficient planning and preparation time, adequate resourcing, thorough implementation and a continual cycle of evaluation and development.

Perhaps ironically, given lack of funding, there are now more appropriate LSMs available than ever before. Unfortunately publishers will have no incentive to continue producing appropriate good quality materials if no one buys them, and if the current selection system continues to be problematic and to allow poor quality materials onto lists while excluding some good ones.

Although the approvals system is designed to keep out the outdated and inappropriate materials, it has the effect of undermining the very curriculum principles it seeks to support. Concerns include observations that the process of choosing evaluators is rushed and unsystematic, evaluators are poorly trained, the evaluation process is rushed, the instruments used for evaluation are inadequate, the criteria in checklists are inappropriately and inconsistently applied and that there tends to be a reliance on technical criteria rather than an understanding of pedagogical principles. In addition there are discrepancies and inconsistencies from province to province resulting in inefficiency and wastage. For example, publishers have been *required* to produce workbooks in some provinces whilst they are being dropped from the list in others.²³

Potenza and Monyokolo argue that the DOE and publishers should work together to ensure the development of good quality, appropriate materials:

The education establishment can play an important role in helping the publishing industry to transform itself and grow because education publishing constitutes such a critical market for this industry. Equally, the publishing industry has a major role to play in developing materials that will assist the process of transforming the curriculum. Effective mechanisms need to be put in place by provincial departments to ensure that publishers develop good quality materials. These might include:

- providing detailed illustrative learning programmes and progress maps to publishers for a particular grade at least 18 months before a call for submissions;
- making the criteria that will be used for evaluating learning materials available in advance;
- ensuring that publishers have sufficient time to develop quality materials; and
- empowering teachers, through training, to select appropriate materials. (1999: 244).

However, what they do not point to is the vital issue of expenditure on LSMs upon which the success of such a venture depends. This is an issue we address in the next section.

A final point about the need for appropriate materials must be made given that the current atmosphere stresses the need for increased efficiencies and decreased expenditure. The tensions between educationalists and administrators in implementing educational policy is exemplified in the instance in 1996 when some provincial planners analysed the number of textbooks in school storerooms in Mpumalanga and the Northern Province and concluded that schools could 'make do' with redistributed stocks from the stores available. Such an accumulation of materials is possibly worse than having none at all given their inappropriate content and poor quality and their inability to meet the needs of those for whom they are intended. Redistribution of this kind is even more problematic when teachers do not understand the intentions of a new curricula approach and do not know how to adapt poor materials in order to try and make better use of them.

Such redistribution is a false economy. Developing and purchasing suitable materials will always cost money, and it is this issue that is discussed next.

3.5 Access means expenditure

That a minimum level of adequate materials should be available for learning to occur is clear. This always requires expenditure, which happens in two ways: on the development of appropriate materials, and on the purchase of those materials. Whether LSMs take the form of educational radio or TV, supplements in newspapers or departmentally written booklets, money

²³ These issues are explored in detail in Proctor, A (1998) 'Evaluation, approval and supply of learning materials: experiences of current provincial systems and their implications', paper presented to Kanton Education Conference, and Murray, S (1998) 'A textbook author reflects on the evaluation of learning materials: delivery quality materials to learners,' unpublished paper.

will be spent both on the production itself, to access and pay for the specialised skills needed, as well as the cost of distributing the materials to the right places on time.

Comments such as the following are thus disingenuous:

OBE and training is not only sophisticated to the extent that it responds to the relevance needs of learners in a highly technological context requiring hi tech resources for the demand of modernity, and critical and creative thinking; it is also sophisticated in the sense of enabling and encouraging teachers to use whatever is accessible and available in the environment, albeit rural, poor or less developed (Mohamed, in Jansen and Christie: 165).

Such resources may be free but developing sophisticated teachers who can exploit them also requires expenditure, which must be costed into sustainable budgets (Lewin 1999: 8). It must also be noted that in order to use the resources around them, teachers themselves are likely to spend money (See for example the Western Cape evaluation²⁴).

Whoever is responsible for LSM development – be it publishers, NGOs, the state, or teachers themselves – pays for what is a complex development process. Indeed in the preparation for the implementation of Grade 1 in 1997, publishers estimate that they spent at least R80 million. Materials development through such NGOs as Read, ESST and so on is more difficult to calculate as is state expenditure²⁵ on materials development. Of course, materials developers usually aim to recoup their costs through the purchase of materials by provincial education departments, parents, donor agencies and corporate grant givers.

The responsibility for resourcing has changed from a situation where the national level of education through the 17 previous departments made key decisions about expenditure. Resourcing is now the responsibility of both the government and of parents and schools through the Schools Act and its empowerment of SGBs. Thus, there are more role players with a responsibility for expenditure, these being the National DOE, Provincial DOEs, SGBs as well as parents. In addition, the private sector and donors are playing a much bigger role in providing finances for LSM provision.

The national level of education (and specifically the Minister) has a responsibility through the National Education Policy Act of 1996 to develop policy that will improve the facilities that contribute to national education.²⁶ Provincial DOEs are responsible for the Funding Norms and Standards allocations and decide which schools fit into which bands, thus determining the level and percentage of state expenditure to be provided at each school. With regards the responsibility of SGBs the Schools Act states that ‘the governing body should take all reasonable measures within its means to supplement the resources supplied by the state in order to improve the quality of education.’ We have already noted that in practice this means that middle class schools will thus raise more funds through fees and fund raising projects, while the majority will not be able to supplement school budgets in this way.

As we have already mentioned, spending on non-personnel items has decreased for the fourth year in a row (Bot 1999 p.1). Expenditure on LSMs has fallen dramatically with Government

²⁴ Of the teachers interviewed, 54% commented that OBE implementation had been expensive. Their expenses were: photocopying -87% (of the sample; paper - 55%; transport - 45%; glue - 44%; apparatus - 30%; own expenses- 30%.

²⁵ We know for example that Grade 1 teachers’ guides worksheets and posters were privately developed, funded, and distributed by the National Department in 1998, but do not have the costs for developing and distributing these materials. (Bot XX:15)

²⁶ It is of note that the authors of the Schools library draft policy understand this to include library facilities and argue that it is intrinsic to the Constitution that the State provides the necessary facilities for a basic education and that libraries are a necessary part of that basic education.

spend on textbooks dropping by up to 90% between the 1995/96 financial year where R895 million was spent and the 1997/98 year where only an estimated R80 million was spent. It rose slightly during 1998/99 and was supplemented by the R212 million special allocation for Grades 1, 2 and 12.

This situation is exacerbated by the variation of spending in the different provinces, as the table below indicates within just one financial year.. This 1996/7 year showed a range of book spend from as low as R3 per learner in primary schools in the North West and Northern Cape, going up to a 'high' of R42 per learner in Mpumalanga.

	Primary textbooks expenditure 96/97	Secondary Textbooks expenditure 96/97	Primary stationery expenditure 96/97	Secondary Stationery expenditure 96/97
	R per/ learner			
EC	25	46	38	70
FS	30	53	35	39
GT	31	64	24	45
KZN	19	32	25	37
MP	42	68	27	38
NC	3	15	0	2
NP	36	90	21	52
NW	3	22	0	0
WC	30	79	27	44
National	26	56	17	32

Sources: Edusource; Crouch and Mabogoane 1997

In addition, preliminary research into school library expenditure suggests that almost nothing has been spent on additional resources beyond textbooks. That there is a trend to cut back on resources is evident in a KZN memo (19/10/99) to the chief directors of all regions, which states:

COST CUTTING STRATEGIES IN SUPPORT OF LSMS TO MEET BUDGETARY LIMITATIONS.

In view of financial constraints...

- 1.1. No topping up of Grades 1 and 2 to existing schools
- 1.2. Teachers kits, sets of flash cards, work cards, charts, extra resource books will be removed from the purchase lists
- 1.3. Pupils workbooks in the Foundation Phase will be removed from the list

The R212 million special allocation for LSMS in 1998/99 masked the severity of the situation as this learner budget for non-personnel expenditure reveals. These amounts must cover not only LSMS, stationery and equipment, but also items such as water, electricity, security, school maintenance and repairs.

Province	Rands per learner
EC	R196
FS	R292
GT	R464
KZN	R181
MP	R258
NC	R609
NP	R268
NW	R316
WC	R390
All	R278

Source: Dept of Finance quoted in Bot April 1999

Some concerns about the growing gap between the advantaged and the disadvantaged schools are being addressed by the Norms and Standards for School Funding which allocates government finance to School across quintiles from the poorest to the least poor, with expenditure allocation being: poorest schools 20% - 35% of the resources; next poorest schools

20% - 25% of the resources; next poorest schools 20% - 20% of the resources; next poorest schools 20% - 15% of the resources; least poorest schools 20% - 5% of the resources.

While the Norms and Standards legislation envisages a minimum learning package of R100 per learner, this is arguably insufficient because:

- a secondary learner would need an estimated R350 worth of books to cover all subjects studied
- it has not allowed for a 30% annual rise in the price of paper since the figure was first proposed in 1996
- it does not allow for supplementary materials such as dictionaries, atlases or readers
- if this figure is intended to include expenditure on resource material for school libraries, it is clearly inadequate for the purchase of sufficient materials to support C2005

While expenditure for the year ahead is hard to guess, a sense of one province's plans are known at this time. The Western Cape Education Department (WCED) Circular 0084/99 ('Norms and Standards for the funding of Public Primary and Secondary Schools') lists the eleven²⁷ categories according to which allocations have been made, with amounts ranging from R28 per learner to R196 per learner, and a total of R48m having been allocated for LSMs. LSMs include library books and materials and prescribed books.

WCED officials estimate that for 1999, R11m to R14m from a total of R38m could have been spent on LSMs (PASA 4/11/99). Based on this, and on the assumption that relatively more money has been allocated for 2000 to schools in greater need of LSMs than for 1999, one could expect schools to order LSMs to the value of more or less R16m. About 320 schools will immediately be granted extended powers for their SGBs. Among other things, this means that they will have full discretion over their allocations. No special allocations have been made for Curriculum 2005, and the WCED officials were wary to indicate that such allocations might be expected.

While on the one hand it is encouraging that plans are being made and orders placed, this is only one province, and despite being one of the better-off provinces expected expenditure on materials is still far too low.

Given this climate and the diminishing government spend on resources, other potential purchasers are starting to play a more significant role. Until now donors have not been active book buyers in South Africa (as in the other parts of Africa, for example) but there are indications of increased donor activity. These include R15 million from Netherlands Government specifically to support C2005 and OBE, which the Ministry has spent on LSMs for the most needy of schools, R150 million in the pipe-line to READ through the British Council programme for reading schemes and the European Union allocations of R10-12 million for the purchase of adult learning materials.

Private sector spend has not been analysed in terms of expenditure on LSMs. What we know is that corporate education grants in 1998 came to R800 million (49% of the total 1630 million Corporate Social Investment Budget) and that about two thirds of this R800 million was spent on formal education with the largest allocation going to tertiary education (Corporate Social

²⁷ Note that although five categories or bands were suggested, the WCED decide rather to use eleven categories.

Investment and Development Handbook 1999. P. 162)²⁸. Sadly this total amount is less than the R1,2 billion estimated as necessary for the proper supply of materials to schools each year.

We know of at least two private sector initiatives to support LSMs in the form of the Independent Newspapers in KZN as well as the Sowetan (together with three private sponsors) both of which initiated book relief schemes to provide cheaper textbooks for matric students, but the value of these schemes are not known (Bot p.15).

Given that 97% of corporate grant-makers contribute something to education, this is an obvious sector to lobby for additional funds for LSMs and this process has already begun with an appeal to businesses to support C2005 by helping to raise 'the R8000 each school needs for basic materials' (Asmal 1999c).

We can conclude from this discussion about access to LSMs:

- C2005 is reliant on access to learning materials.
- To be effective LSMs must be well-structured, well-prepared and appropriate.
- There are disparities in access to learning materials between individual learners, schools and provinces. These disparities relate to wealth, social class and urban/rural differences.
- Cutbacks in funding have created pressures at every level of the system. They have a disproportionate effect on facilities serving poor communities.
- Responsibilities for the selection and funding of LSMs and other materials has been devolved requiring increased capacity at different levels of the system.

3.6 Access is not enough - access to appropriate materials is a necessary but insufficient condition of learning and the achievement of OBE curriculum goals

In this section of the Report, we have argued that access to appropriate LSMs is essential, and that whatever materials are provided this will involve expenditure. However, this alone is not enough. It is quite possible that LSMs may be delivered to schools and classrooms and either be used inappropriately or not at all. It is this issue which we examine in the next section of our Report.

4. LSMs, teachers and the classroom

Throughout this document we have argued for a contextualised understanding of curriculum and curriculum policy. Although factors can be looked at separately, it must always be remembered that they are interrelated and that their relationship is dynamic. A central relationship for this Report is that between LSMs, teachers and learners. It is to this which we now turn. We begin by looking at the context in which LSMs are used; we then look at two issues crucial to the use of LSMs - language and literacy; next we critique the false dichotomy often constructed between providing LSMs and supporting teachers; and finally we examine research into the ways in which teachers interpret, create and evaluate LSMs.

4.1 The contexts of classrooms

Classroom based research in South Africa has generally been small-scale, qualitative and perhaps less than rigorous (e.g. Threshold Project 1990; PEI Research 1999; various C2005 evaluations 1998-9). Furthermore, there are profound structural differences in the education system as a consequence of apartheid, particularly in terms of availability of resources. On both grounds, it is difficult to generalise about what goes on in classrooms.

²⁸ The increase of CSI spending has however flattened off in the last year to 4,5% (below the inflation rate) although a third of CSI grant-makers anticipate their spending on education to increase over the next three years. (ibid), Published by BMI Rivonia 1999

That said, the picture which emerges is worlds apart from that envisaged by the new curriculum. Whereas C2005 creates a vision of learners becoming 'world citizens', critically and conceptually empowered and information literate through learner-centred resource-based learning, the 'average'²⁹ class in a township or rural school is teacher-centred, conceptually impoverished and under-resourced. A number of researchers have pointed to the fact that teachers in these schools are enthusiastic about OBE but unable to implement it. Lessons are dominated by teacher talk and low-level questions. Teacher talk is procedural rather than conceptual and does not promote critical thinking. Lessons are characterised by poor planning and time-management, a lack of structure and the absence of activities which develop higher order thinking skills such as investigation, understanding relationships and curiosity. Numerous researchers refer to the lack of reading and writing that goes on in class and consequent low levels of literacy – this is consistent from the time of the Threshold Research in the late eighties to the most recent research reported in the PEI Report and OBE evaluations. It has been suggested that this is because of a lack of books and because teachers themselves do not read. Taylor and Vinjevoold state emphatically: 'The paucity of books, and the inability of teachers to use them constructively are the greatest sources of illiteracy in our schools (1999: 161).'

However, as Jansen (1999) reminds us, there is another very different picture. He investigated schools across a range of types (from extremely under-resourced to very well-resourced) in two different provinces, and what he demonstrates is the way in which access to resources constructs different teaching practices. He describes what he found in two very different classes:

The varied implementation strategies employed by teachers (including non-implementation) reflect back inequalities across the post-apartheid education system. Teachers within white well-resourced classrooms were clearly reflecting C2005 and OBE principles within their practices even when they were unsure about the meaning of OBE or uncommitted to its implementation. In the white classrooms we observed, the sheer weight of material resources demanded some level of C2005 implementation. In one class, the following were all used within a five day period: individual computer-based learning, sophisticated teacher aids, learner-prepared materials, audio-visual facilities, other specialist equipment and five different learning sites outside the official classroom – including a field trip ... Within 5km of this school, another teacher read off a lecture to Grade 1 children for long periods of time, and then disappeared for hours while these learners tried to teach each other. The packed classroom, without any facilities or materials, simply experienced the same scenario day after day through the period of observation. (p. 214)³⁰

This comparison points to the role of both resources and capacities in the differentiation of schools. It also points to the fact that different communities of practice exist. These practices develop over time, and they are formed through the daily activities which take place in classrooms dependent largely on the material resources available. Eventually practices become taken for granted and they encapsulate sets of knowledge, beliefs and attitudes about teaching and learning. It is this that we refer to when we talk about discourses.

For some teachers the language (English) and discourse (modernity) of OBE and 2005 are relatively familiar, but for others, as we have already discussed, they are largely foreign. They may find it difficult to even recognise the 'rules' of the new discourse (Shalem and Slonimsky 1998; Harley and Parker 1999). It is important, in our view, to recognise this, because it is a necessary starting point from which change has to begin. But one must also acknowledge that although C2005 may have its origins in a foreign educational discourse, it is shaped by global

²⁹ As we have already noted it is potentially misleading to talk of 'averages' and there are admirable exceptions to the picture we present.

³⁰ The GICD (1999) report observes similarly that actual OBE practice is more readily seen in ex-TED schools, despite enthusiasm for OBE being greater in ex-DET schools.

changes in the economy and knowledge production, and it is in tune with South Africa's liberal democratic policies (Enslin 1999). The success of these policies is dependent in part on an education system which can produce the knowledge, skills and attitudes that they assume. So we cannot simply turn our backs on it. As well as addressing disparities in physical access to resources, we have to find ways of helping teachers to engage with C2005 and appropriate it for our varied circumstances. The immensity of this task in terms of both the resources and capacities which it requires, should not be underestimated.

As we have already pointed out, policy documents see a role for LSMs in bringing this change about. This may be so, but it must be understood in terms of what we know about teacher development and the process of change. We must recognise that curriculum innovation of the type involved in C2005 involves changes in the very premises of teaching. It is thus a deep process: demanding, difficult and potentially painful since it will necessarily involve cultural change. It cannot, therefore, be achieved by a technical approach which assumes that it is simply a matter of improving professional skills and providing the necessary materials for 'implementation' (Stenhouse 1975; Shon 1987; Guskey 1995; Sikes 1995).

In this section, then, we consider the role of LSMs in bringing about change in classroom practice. Throughout our discussion, we attempt to understand existing practices and where possible examine teacher development programmes which have successfully engaged this practice and brought about change. We begin by looking at language and literacy, which are central to understanding how LSMs are interpreted, produced and used in classrooms.

4.2 Language and LSMs

As we have already discussed, the use of what is for many children a foreign language, is one of the main barriers to teaching and learning. Yet parents increasingly choose English for education, and teachers support this despite the fact that they are fully aware of the difficulties this presents for learners (Bot 1993).

Alexander (1999) helps us to understand why this is so, and the implications it has for acquisition of the knowledge and skills which C2005 seeks to develop. He points to the fact that the richer a country is, the easier it is to deal with multilingualism in an equitable way. In Africa (and other post-colonial situations), the colonial language takes precedence because a linguistic infrastructure (bureaucracies, books, publishers, printers, trained professionals as well as discourses and traditions) is inherited, which it would be very costly to replace. This is reinforced by the pressures of globalisation, which we have already described

These forces lead Africans to undervalue their own languages and desire education in English (or other colonial languages) with the result that literacies are not firmly established in African languages. Alexander believes this results in economic and educational underdevelopment because scientific and technological concepts do not become part of the discourse of African languages and therefore part of the common currency of ordinary African people³¹:

... the concepts of science and technology are not embedded in the consciousness of the people of the continent, most of whom have either no grasp, or only a very inadequate grasp, of the European languages in which modernisation comes packaged to the continent (1999: 9)

In South Africa, 48% of the population speaks neither English nor Afrikaans (DNE, no date). Alexander believes this is unlikely to change, not because of poor texts and materials, learners' low motivation, inadequate learning theories, or the other explanations that are commonly

³¹ Lewis Nkosi (1981) made the same point.

proposed but rather for economic reasons which make it impossible for ordinary South Africans to acquire high levels of competence in these languages.

The preference for English has led some commentators – most importantly the writers of the influential PEI Report – to suggest that this should be accepted and conditions should be promoted ‘requisite for effective teaching and learning through English.’ Alexander argues that this is an empiricist analysis, which does not critically engage with the reasons that parents make such choices, nor the impossibility for many children of learning English to the levels required, given the economic and social circumstances in which they live and attend school.

His position is supported by local research. The difficulties of teaching and learning through the medium of English in township and rural schools have been vividly documented by Macdonald (1990) in the Threshold Report. Most students do not have the language proficiency to cope with English as a language of learning and teaching; nor is English acquisition supported in the home or community. She observed: ‘teachers simply do what they can in a difficult, if not impossible, situation and in the end the language proficiency of the children actually moulds the task of the teacher (1990: 44).’ More recently, the GICD evaluation of the implementation of OBE states: ‘the fact that so few ex-DET learners are being taught in their home language (compared to other schools) means that the educator and the learner have many more challenges facing them in terms of achieving learning goals. Ex-DET educators may need special training and support in this area to help them better achieve learners’ understanding of outcomes as well as other content’ (*ibid*: 60).

What is the part played by LSMs in this situation? Writing in 1993, before the introduction of C2005, Potenza claimed: ‘The majority of students cannot cope with learning through the medium of English. These problems are compounded by inappropriate textbooks. Publishers have not begun to address the problem of English as the medium of instruction, particularly in the way materials are presented (p. 47).’ She made the point that simplifying the language does not have to involve over-simplification of concepts or activities.

In the same year, Langan reported on his investigation into the use of geography textbooks (written in English) in Grade 5. In the schools he investigated, he found that teachers did not hand out textbooks to learners because they felt they were too difficult for them to read. It would be a waste of teaching time and frustrating for learners. Instead they gave students notes (abstracted from the original text and sometimes distorted) to learn off by heart, which they reproduced in tests. Textbook tasks were also regarded as too difficult and were included in the notes to be learnt. Ellis (1985:173) and Probyn (1995) report very similar findings. This sets patterns of rote learning and dependency on the teacher as ‘keeper of knowledge’ which persist through secondary school, with implications for students’ cognitive development (Macdonald, 1990:44; Probyn, 1995).

Moreover, teachers themselves may have problems with the language of LSMs. Langan found they had problems in understanding textbooks because of lack of subject knowledge and English reading skills (1993: 138), but when texts were rewritten, taking these factors into account, their understanding improved (*ibid*: 139). Language was also cited as a problem in the evaluation of the C2005 pilots in both Gauteng and the Cape with 84,2% teachers requesting that learner support material be written in simpler language. In addition, it was reported that ‘some teachers did not get the full benefit from the training conferences due to the inaccessibility of English as a second or third language’.

Little research has been done into the provision of LSMs in African languages. A recent study is that carried out by Pyle and Smythe (in Taylor and Vinjevold, 1999), in which they provided

teachers with accessible materials in both English and Sesotho. Although teachers said they liked the materials, they did not use them in class. Pyle and Smythe suggest that they lacked the subject knowledge to incorporate them into their teaching. The problem may also lie in the Threshold Project findings that teachers had poor reading skills in both their home languages and English.

The problems in understanding LSMs written in English have been recognised at a policy level. The Generic guidelines for the development of LSMs (DoNE 1998a) refer to the need for the language of LSMs to be accessible for both second-language users and mother-tongue speakers. At a different level, the draft Norms and Standards for Educators require that teachers can produce LSMs appropriate to the language competence and culture of learners. Outside of the language policy documents, there is little acknowledgement that LSMs might be produced in other languages.

Publishers recognise the need for learning materials in African languages and for graded materials in English for second language learners and these have been developed. Ironically, they are unlikely to be republished as they have been made available at a time when there has been both a move towards English medium education; when a new curriculum is downplaying the role of published materials in favour of those developed by teachers; and when there is little funding for published materials. Yet if resources are mainly in English, with little incentive for publishers to develop African language texts, then access to largely English materials in a resource-based curriculum, will remain a problem for the majority of students and teachers. If teachers and students are not able to engage with texts, then it is likely that old practices of rote-learning will remain locked in place.

In summary, it can be seen that the constraints of learning and teaching through an inadequately mastered second language mould teachers' practice and inhibit students' learning. This raises serious questions about the feasibility of moving to learner-centred, constructivist, enquiry-based practice which does not appear to be fully recognised or acknowledged by education authorities, curriculum designers, writers, publishers, parents, teachers, students or the public at large. Language is also a central concern with regard to enliterating young children, the topic to which we turn next.

4.3 Literacy and LSMs

Before learners can develop the deeper cognitive skills necessary for the sophisticated literacies required by C2005 - critical literacy, information literacy and so on - they must be able to read and write. It is upon this that all further education depends, and it cannot happen without books. As Taylor and Vinjevoold (1999: 233) put it:

Learning materials are essential because without books to read and write in, schooling as cognitive development cannot take place. All subsequent learning depends on the development of progressively higher and differentiated forms of literacy.

This point was acknowledged by the Minister of Education at a three-day Pan-African Conference on Children's Reading when he said, 'The dismally low reading skills of South African pupils is a major cause of overall school failure and dropout.' (Professor Kader Asmal August 5, 1999). He appealed to writers and publishers to 'put good books in the hands of children. Children cannot become life-long readers if books do not excite them'.

In South Africa, only 5% of learners entering high schools have the required levels of literacy (Edusource No 23, 1998). According to a READ Study, 'on average students entering grade 8 in rural areas have a reading level of 7,6 years while their chronological age is 14,4 years' (reported in READ 1998). Such poor literacy attainment stands in the way of implementing resource-based learning and therefore C2005. Yet as we have pointed out, simply making books available might

not be the answer. Repeated studies have shown that even when LSMs are available, they are not always used (Pyle and Smythe in Talor and Vinjovold 1999, Wickham and Versfeld 1998a and b). Very little time is spent by learners reading and writing in class, and what writing is done is of a rudimentary kind (Pyle and Smythe, Schollar, Duncan, Dachs reported in Taylor and Vinjevold 1999). This is the case whether English is the language of learning and teaching or an African language (Macdonald 1990). In fact, the Ministerial Committee on the Senior Certificate Examination is quoted in the PEI Report (1999: 201) as observing that problems with literacy appeared to be 'particularly prevalent in the African languages.'

This suggests that literacy is not a deeply rooted practice in many schools. This is borne out by the observations of Flanagan, an experienced teacher educator, who suggests that teachers do not read themselves:

Few teachers see themselves as taking control of their own learning and becoming literate in the process. These teachers are not embedded in a culture which sees reading as an everyday practice. The practice of western³² influenced people who introduce children to books at a very young age is not a common practice in South Africa. The majority of teachers come out of a tradition which does not include regular literacy events, so practicing the skill of reading and engaging with text in a critical and skeptical way is not something that these teachers have been socialised into. They do not have the disposition to engage with text epistemically, a disposition which Wells (1990, 374) argues is essential for a fully literate person. (1995: 7)

She goes on to suggest that this is not only a cultural effect. The majority of teachers have attended colleges where 'the educational process is dominated by dictated notes and the regurgitation of these notes or extracts from textbooks (ibid p. 7).' Mosala (quoted in Cazden 1994:173-4)) supports the cultural dimension of Flanagan's argument, claiming: 'We were brought up to believe, and honestly believe, that writing is not our turf at all ... We are of the oral tradition and I believe firmly that thousands of kids that fail the 12th grade fail not because they haven't put in sufficient work to enable them to pass; they fail because writing is not in their culture, as they are not able to write as lucidly as they want.' Mosala's response to this situation demonstrates how both culture and educational practice can change in response to new demands when resources and capacity are present and there is an opportunity to reflect on current practice. She describes how by 'redirecting' students through writing, her project - the Educational Programmes Centre - improved their matric pass rate from 76% in 1991 to 96% in 1992.

There is clearly a need to better understand the literacy practices of both teachers and learners. The reports of students flooding into public libraries suggest that there are learners actively seeking out opportunities to develop their literacies. Prinsloo and Bloch (1998) report that progress has been made in researching the literacy practices of adults in South Africa, and that we need to move on from this. It is our view that will not be possible to sustain literacy programmes without an understanding of current literacy practices.

International research points to the importance of institutionalising literacy, and the interrelationship of resources, capacities and practices which this involves. A study aimed to assess differences in reading achievement levels of 9 and 14 year old students in 32 systems of education, and to link these differences to variations in policy and practice across countries, it was found, unsurprisingly, that levels of reading literacy for most countries closely related to their national indices of economic development, health and adult literacy (Elley1992). Factors which consistently differentiated high scoring and low scoring countries were large school

³² One perhaps needs to get away from the idea of literacy as a western phenomenon; it is deeply rooted in Eastern societies and Macdonald (1988) draws on Japan in her discussion of parents' and teachers' role in reading to young children.

libraries, large classroom libraries, regular book borrowing, frequent silent reading in class, frequent story reading aloud by teachers and more scheduled hours spent teaching the language (*ibid*:pg xii). It is of concern that in South Africa school and public libraries are in such a precarious state; in the apparent absence of much reading and writing in schools or at home, public libraries are the main institutions sustaining literacy.

We now examine in some detail two local literacy projects which have successfully intervened in schools, for the insights they offer. They show:

- Levels of literacy are low, especially in rural schools.
- Language is a factor - both teachers' and learners' proficiency in English.
- Appropriate resources are necessary to improve this situation.
- Resources must be accompanied by sustained, school-based teacher education.
- Attention must be given to the management of resources.

The first project, READ Educational Trust, adopts a book-based approach to learning language. It provides box libraries and reading kits in primary schools, coupled with ongoing classroom-based INSET – workshops followed by systematic classroom visits and monitoring, and training for school principals in management skills. At secondary level, it supplies and develops resource collections and provides training and motivational support for teacher and student librarians.

Le Roux and Schollar (1996) in an evaluation of English reading and writing skills in READ programmes, tested learners from 49 schools in 6 provinces: 29 where READ had run programmes and 20 control schools where there had been no READ intervention. They found that in grade 7, the READ learners were 18 months ahead in reading and 2 years ahead in writing. They note that the results showed major differences between urban and rural schools in reading skills – on average 60%.

Le Roux and Schollar do not address the issue of learners' home language literacy, which is especially important in rural areas where learners have little access to English. However, they report that literacy levels are generally low even including READ schools: 'the writing test showed that very few pupils could write accurately and coherently. Out of every 100 sentences written by Grade 7 pupils in READ schools, only 40 were correct; in control schools, less than 20. *When one considers that these are pupils who are on the threshold of a secondary education career, where reading will form the basis of their study skills and writing will form the basis of their examination skills, the implications are very serious'* (original emphasis).' (*ibid*: 18). They also report that interviews with teachers and principals 'highlighted a major problem in teaching writing skills: teacher proficiency. Most teachers confessed to a lack of confidence in their own English language proficiency, and readily admit to trepidation when they are expected to mark and/or correct their pupils' written work. We came across many examples of pupils' work which had not been marked at all, or which had been marked incorrectly' (*ibid*: 19).

In the evaluation of the READ programme Le Roux and Schollar (1996) claim that its effectiveness is related to reliable and thorough administration; systematic school visiting and monitoring; and the organisation of motivational events. In a subsequent evaluation, Schollar and Associates (1999) concluded that highly structured materials gave teachers confidence and provided the opportunity for practice and internalisation of skills, and that consistent school and classroom monitoring ensured that the materials were in regular use; that teachers were developing the methodological practices expected; and that they were moving beyond simple replication of the materials. In interviews teachers claimed that READ had made OBE and C2005 more understandable by translating theoretical and abstract methodological concepts into worked-out materials and activities.

The second project we look at is Molteno. Their programme was founded on the belief that African children were not learning to read in English because they had not been given the opportunity to acquire basic literacy in their home languages (Kingwill, 1998: 19). Thus Molteno enliterates children in their home languages and then provides a 'Bridge to English'.

Like the READ programme, Molteno emphasises the crucial role of both carefully structured materials, and teacher training combined with classroom-based monitoring and support (*ibid*: 42). Kingwill (*ibid*: 28) describes a situation in which Molteno materials were not effectively distributed, teachers did not receive systematic classroom monitoring and support, and some teachers tried to implement the method without proper training. Little success was achieved in this instance.

The Molteno Project chairman's report (1998) claims that the way in which C2005 has been introduced may have had a negative affect on literacy. Teachers are uncertain how to integrate the teaching of basic literacy and numeracy into OBE. This claim is supported by Potenza and Monyokolo (1999: 209) who report on the Foundation Phase evaluation in Gauteng. The evaluation team found that less confident teachers tended to focus on designing activities related to the theme of the lesson (programme organiser) at the expense of teaching basic reading, writing and mathematical skills. They repeatedly asked questions like, 'Do we still have to teach reading and writing?' and 'What do we do about reading if the readers we have don't fit in with the Programme Organiser?' Similarly, Duncan (in PEI 1999: 152) reports: 'South African schools have submerged initial reading instruction in the general melee of Foundation Phase activities.' In his view, the teaching of reading is incidental and sporadic rather than a principal focus and outcome of lessons. In Jansen's study teachers argued that OBE should be introduced after learners had become competent in reading, writing and numeracy, (1999: 209).

Molteno's recent report on its work in Zambia provides insights, especially with regard to the inliteration of rural children. After independence, Zambia adopted a straight-for-English policy. Later research revealed very serious reading retardation problems in both English and local languages. The Molteno approach with accompanying LSMs was introduced to remediate this situation. The first pilot programme, in the Icibemba language, was introduced to Grade 1 pupils in twenty-five schools in a poor rural farming district. In early 1998, the international monitoring team observed that the Breakthrough children in Grade 1 classes were already reading and writing at a level equivalent to Grade 4 or higher. This improvement was sustained in Grade 2 where learners were able to transfer these skills into English and were making rapid progress with other subjects. Furthermore, the evaluators observed: 'There were clear indications that a significant new philosophy of education was evolving in the classrooms. Particularly, there was a growing child-centred and problem-solving approach to teaching (Molteno 1999).

Lessons to be learnt from both the Molteno Project and the work of READ are valuable and include the need for highly structured material as well as the importance of sustained training and follow up for teachers to increase their confidence and capacity for innovation. They also contribute to our understanding of the factors which affect literacy, these being:

- access to books;
- economic development;
- importance of language especially in rural schools;
- teachers' own literacy and educational development;
- the need for explicit focus on literacy in the Foundation Phase;
- the importance of resource management.

This tells us where we need to begin in improving levels of literacy. However, we must also not lose sight of what we need to aim towards. The acquisition of sophisticated literacies

(information literacy, critical literacy, visual literacy, media literacy, computer literacy) is the foundation on which the whole edifice of resource-based learning, OBE and C2005 rests. Teachers' own ability in regard to these literacies and their competence in the language of instruction are central to their use of LSMs in the classroom, the issue to which we now turn.

4.4 LSMs in the classroom

As we have already noted, there has been a tendency in the past to isolate factors which influence school effectiveness. In relation to LSMs, there have been debates as to whether textbooks (and other LSMs) are more important than teacher education; and whether teachers should use published LSMs (including textbooks) or create their own.

4.4.1 Teachers or textbooks – a false dichotomy

literature on improving education in developing countries, claims that the provision of textbooks is a more cost efficient intervention than teacher education (World Bank, 1988; Altbach and Kelly, 1988). The main source of this claim is Farrell and Heyneman (1988, 1989). Their view is widely quoted in South Africa by publishers and others (Krut, 1993; Proctor and Monteith, 1993, GDE/GICD 1999).

Farrell and Heinemann believe that lack of textbooks, resulting from disproportionate expenditure on teachers' salaries, is the main reason for declining educational standards in developing countries. They cite as evidence, the relative expenditure on textbooks by various developed and developing countries and set that against primary science test results: the developing countries spend less and achieve less. However, it seems fallacious to extract spending on textbooks from a range of other variables negatively affected by reduced socio-economic conditions, which would also influence test results.

As we have already mentioned, input-output models of this type have been criticised (Fuller 1988; Venezky 1992). Relationships between textbooks and achievement are influenced by a variety of factors, many of which are difficult to measure accurately (e.g. teacher competence; school management). As Fuller remarks: 'Material resources provide the instruments and simple technology necessary for effective instruction. But the use and management of these material inputs occurs through social practices' (ibid: 52).

Torres (in Vally 1999: 6) takes a view diametrically opposed to that of Farrell and Heynemann, arguing that since the implemented curriculum depends fundamentally on decisions made by teachers (with or without textbooks), the surest way of influencing it is through teachers. In her view, textbooks are educational tools whereas teachers are educational agents. She argues that programmed, self-contained texts disempower teachers.³³ It is this position that informs much pre-service teacher education (especially that with a critical or humanist orientation) that promotes the view that 'good teachers do not follow the textbook but devise their own curriculum and materials (Feiman-Nemser, 1988, quoted in XXX pg 316)'.

This view has been strong in South Africa education for political reasons. Critical theorists such as Muller and Taylor (1993) saw textbooks as legitimating the knowledge of powerful groups in society. Textbooks were part of a process of deprofessionalising teachers and creating an authoritarian hierarchy in both education and knowledge construction, and commodifying

³³ This appears to contradict the views expressed earlier, but it depends on whether one sees 'programmed texts' from a behaviourist perspective or one that is aimed at inclusion and access, as in the case of Cope and Kalantzis.

knowledge. This view was strong in People's Education, a resistance pedagogy which came and went in the eighties, but has left traces in C2005 (Kraak 1998).

An alternative political view is that of Cope and Kalantzis (1993). Whilst accepting much of what the critical theorists say about the commodification and canonisation of knowledge, they criticise them for not acknowledging the power of the canon and the need to give all learners access to it. Similarly, they critique progressivist approaches to the curriculum for their overemphasis on local, contextualised knowledge, and failure to induct students into the dominant discourses of power – in particular, scientific discourse and the knowledge associated with it – thus perpetuating inequality. They claim that progressivism often ends up in a 'fragmented, eclectic photocopier curriculum, where, to give content to the curriculum, teachers bring in photocopies, often from old textbooks cast in the most traditional pedagogical mould' (p. 6)

Cope and Kalantzis suggest an alternative pedagogy for 'inclusion and access' which draws on the traditional curriculum's structured systematic learning programmes combined with the progressive curriculum's insights regarding active experiential learning. They see a new role for textbooks combining 'carefully planned programmes sustained over long periods of time and based on expert knowledge' with 'explicit recursive patterns that draw students beyond experience to generalisations and back to experience.' They claim, too, that devising such learning programmes is 'too much to expect of teachers working in isolation, even if they have the required knowledge' (p. 21),

As other authors do, we challenge the polarity of the textbook/teacher debate. We sympathise with Hutchinson and Torres (1994) when they question the frequent hostility towards textbooks in academic circles. This perspective is being echoed locally. For example, the GETC Report (1999) strongly criticises the implementation process in Gauteng for the 'condemnation of everything that has been done in the past' and 'anti-textbook approach.' (ibid: 9). Taylor claims that abandoning textbooks could 'increase the disparities between the privileged and the under-privileged (in Wickham and Versfeld 1998: 3). Together with Vinjevold (1999: 232) he argues: 'It is important that the value of textbooks be re-established in the minds of teachers, teacher educators and school managers.'

The teacher versus textbook (and other LSMs) debate creates an either/or situation where we believe a 'hand-in-hand' scenario should be promoted. From all accounts, it appears that material inputs such as textbooks and other LSMs cannot, on their own, improve teaching; they must be accompanied by teacher development. On the other hand, making learning happen in an under-resourced classroom is a huge challenge for even the best and most experienced of teachers. The goal then is to develop LSMs which can be used in specific contexts in specific ways, to educate teachers to use them appropriately and develop supplementary materials of their own, and to find the money to pay for all this!

It is this 'hand-in-hand' view that frames our discussion of three important components of teacher competence:

- teachers interpreting and using LSM
- teachers designing and producing their own LSMs
- teachers evaluating LSMs

4.4.2 Teachers interpreting and using LSMs

4.4.2.1 Teachers mediating materials

There is considerable evidence to show that teachers mediate materials and adapt them to existing practice, especially when there is no accompanying teacher development. Even critical theorists, who emphasise the power of LSMs, point to the ways in which teachers subvert textbooks: 'We cannot assume that what is 'in' the actual text is actually taught. Nor can we assume that what is taught is actually learnt. ... Teachers have a long history of mediating and transforming that material when they employ it in classrooms.' (Apple and Christian-Smith, 1991: 14). It seems likely that the same will be true of other kinds of LSMs.

International research analysing classroom data found 'little evidence ... to support the idea that teachers teach strictly by the book (Stodolsky 1989: 180 in Venezky, 1992: 436). In another study it was claimed: 'If and how the teacher uses the textbook follows teaching style rather than dictates teaching style' (Zahorik, 1991: 195 in Johannsen, 1993: 176). South African research is coming to similar conclusions. However, there are few studies based on classroom observation and, as we have already noted, wide disparities in context make generalisations problematic. Wickham and Versfeld carried out a study of the role of texts in establishing good practice in under-resourced classes in the Western Cape. They observed, 'the individual teacher rather than the materials used, is the significant determinant in the materials/practice relationship.' And further that teachers use 'textbooks in terms of their established or coded practices rather than according to the material developer's vision (quoted in Taylor & Vinjevd 1999: 171)'.

Local evaluations reveal that teachers do not necessarily share the vision of materials writers nor understand their conceptual goals. Evaluators of the C2005 pilots in Gauteng found that teachers did not use LSMs in ways that assisted learners to achieve the stated goals. The activities in LSMs became an end in themselves rather than a means of developing concepts. One evaluation reports: 'In their preparation and presentation of lessons many teachers did not make a clear distinction between the role played by the learning programme (materials which frame the learning programme) and worksheets, games, puzzles and activity manuals (materials which are supplementary and practical or 'hands on' in support of the learning programme)(ref).

Similar findings were reported by Reeves and Long, and Baxen and Green in the PEI Research. Baxen and Green (in Taylor & Vinjevd 1999: 172) found that teachers provided learners with procedural rather than conceptual support. The emphasis was on completing tasks and getting things right rather than understanding concepts. They never observed teachers helping learners to understand how or why they were using materials.

However, the Western Cape Evaluation found that teachers mediated LSMs for different reasons. They only selected those activities which they felt suited their learners' needs and abilities (p.42); some of the activities seemed to be too easy. This points to differences between the ways in which LSMs are mediated in different contexts.

Despite these findings, teachers involved in the implementation of OBE in Grade 1 claim to have found LSMs provided by the DOE useful. In response to DOE questionnaires administered in Gauteng, teachers reported that they used the teacher manuals and handbooks and found them motivating and confidence-building. However, one must bear in mind that what teachers say they do with materials and what they are observed to do are often different. A Canadian study in well-resourced schools in 1992 explored teachers' experiences of introducing resource-based learning. Using both interviews and observations the researchers found gaps between what teachers did and what they said they did, with some teachers expressing the belief that they were

used to resource-based teaching when they clearly lacked an understanding of the pedagogy (Meyer and Newton, In Hart 1999: 62)³⁴

In South Africa, similar findings were noted in an ethnographic study undertaken in 1998 to examine the potential role of project work in the teaching of information literacy in an under-resourced environment. A grade 7 class was selected in a school known to undertake project work. The conclusions of the study were that 'much of the project work only paid lip service to the notion of independent enquiry learning. Several gaps were uncovered - for example, between what teachers believe and say and what they do. The exploration of these gaps leads to a central finding - that teachers' beliefs and their scripts - which serve to make sense of their worlds - filter pedagogical concepts as they are introduced into the school' (Hart 199: v). This latter point suggests that it is not simply teachers' pedagogical approach which influences their management of materials and learning, but their entire world view.

In a number of classroom based studies, it has been found that even when materials are provided, teachers do not necessarily use them. Evaluations of pilot projects implementing C2005 reported that, in general, the materials (print materials and equipment) provided for the grade 7 pilot project were not widely used in classrooms, partly because they were very new and teachers had not had time to get used to them, and partly because teachers in ex-House of Assembly schools considered them too easy.

Similarly, the PEI Research found that LSMs were seldom used even when they were available. Pyle and Smythe (in Taylor & Vinjevold 1999: 151) reported that although the eight schools in their study had sets of textbooks, teachers never used them with learners because they felt they were inferior and too difficult to read. Reeves and Long (*ibid*: 152) observed that 'Teachers struggled to engage learners in interpreting extended texts because of the low reading levels of learners. Learners had not developed strategies for reading independently.' Wickham and Versfeld (*ibid*: 170) found that in only three of the 32 lessons they observed were textbooks used. The most commonly used resources were worksheets - single sheets of reproduced material (Wickham & Versfeld 1998: 11). In more than 30 per cent of lessons no LSMs at all were used (in Taylor & Vinjevold 1999: 170).

4.4.2.2 LSMs supporting teaching

In lessons where no LSMs are used, it is often the case that students learn little more than they or their peers know already, especially when learner-centred techniques such as groupwork are used. In a recent study Vinjevold (1999) observed:

Without learning materials learners can only talk about what they already know. There was little or no advice provided during the groupwork and pre-groupwork activity to ensure that the group interaction would be productive and lead to conceptual or knowledge development. Without sound learning materials the teacher does not have correct content knowledge to lead class discussion (*ibid*: 13).

Omwu (in Taylor & Vinjevold 1999: 176) found that the use of LSMs helped to change teachers' methodology, increasing the number of learner-centred activities.

International research has demonstrated ways in which carefully designed LSMs can support teachers in bring about curriculum change (van den Akker 1988; Hutchinson and Torres 1994). Van den Akker describes research on the implementation of a primary science curriculum project with principles similar to those of OBE (integrated, active, learner-centred). Initial problems reported by teachers were:

³⁴ In South Africa, research into communicative language teaching has resulted in similar findings (Ndlovu 1993, Alfors 1988)

- They experienced great difficulty in changing their role, especially regarding the forms of inquiry learning.
- They lacked background subject knowledge and confidence in subject matter and skills.
- They saw lesson preparation as a complex and time-consuming chore.
- They had an unclear view of learning effects on pupils.
- Curriculum materials were regarded as imaginative and attractive, rich in ideas and options but short on detailed directions for teachers' actions; users were expected to adapt and extend them (*ibid*: 49).

The original materials were adapted to contain more specific how-to-do-it advice. A control group was given the original materials and an experimental group the adapted materials. It was found that lessons taught using the experimental materials were much more in accord with the intentions of the materials developers than the lessons based on the original materials. The experimental group of teachers was much more successful in creating and maintaining the intended inquiry approach throughout the lesson (*ibid*: 53). With regards lesson planning, the control group spent their time on logistical aspects (collecting materials etc) whereas the experimental group spent it on orienting themselves to the subject matter content and teaching process. The research suggests that the structured approach was more effective. The control group adapted materials to their own routines (assimilation) while the experimental group adapted their own role to the materials (accommodation) (*ibid*: 54).

This research supports Hutchinson and Torres' (1994) view that appropriately structured materials have an important role to play in times of change when normal routines are broken and classrooms become unpredictable and stressful places. Classroom-based research in the USA (Wong-Fillmore 1985) reveals that structure, predictability and routines are especially important when children are learning in a second language. Hutchinson and Torres suggest, therefore, that we should view the structure provided by a textbook as a beneficial phenomenon rather than an undesirable constraint. It provides a plan showing how individual lessons fit into the general development of a learning programme. An ethnographic study in a Cape Flats school illustrates what happens when this framework is not in place – learners use a random assortment of worksheets, they do not have access to the whole learning programme or develop the skills (skimming, scanning, using index and contents page) they might acquire using textbooks. The teacher, on the other hand, is overworked and stressed by the need to select and photocopy endless worksheets from a variety of textbooks (Hart 1999: 212).

4.4.2.3 Teachers managing LSMs

As well as being able to interpret and use LSMs, teachers must be able to manage and administer them. A member of the GET Inset team commented that teachers who had been on GET Inset courses could use new and varied LSMs appropriately, but they had great problems, storing and administering them in the classroom. (Rousseau pers. com 1999). As we have already pointed out, there is a problem with the administration and retrieval of textbooks, which leads to serious shortages. Projects such as READ, only place books in classrooms on condition that teachers and the principal are trained in book care and management. Wickham and Versfeld (1998: 23) refer even more broadly to a range of prerequisites:

... there is little to be gained in providing classroom materials to schools that lack the infrastructure to ensure their effective use. A predictable timetable around which schools can be planned with teachers in class long enough to engage in teaching and learning, secure classrooms in a satisfactory state of repair, secure storage facilities, cleaned-up bookrooms, increased teacher and learner discipline are all important in creating a functioning school. Fundamental to all of these is good leadership and management.

Wickham and Versfeld go on to argue that 'there is little to be gained in providing classroom materials to schools without providing appropriate training to teachers on how to use these (*ibid*:

24).’ There is international support for this view (Read 1989: 50; Hutchinson and Torres 1994: 315), and locally teachers are calling for school-based support on how to use the materials provided (Vinjevold 1999; DOE 1999 b; GICD 1999). Wickham and Versfeld (*ibid*: 23) recommend that such training should be ‘based on an incremental view of both social and personal change rather than that of ‘workshop conversion’.’

A number of conclusions can be drawn from the research we have summarised:

- Teachers mediate materials according to their worldview, experience and practice.
- Teachers do not necessarily share the vision of materials developers or understand their conceptual goals. Consequently, they find it difficult to provide conceptual support for learners using the materials.
- Teachers do not always distinguish between materials which structure learning programmes and supplementary resources. There seems to be widespread use of one-off, photocopied worksheets.
- What teachers say they do and what they actually do are different. This has implications for the way evaluations of LSMs are carried out.
- Well structured LSMs incorporating explanations and pedagogical advice and accompanied by in-service support and training can assist teachers to bring about curriculum change. Training must include the management of resources.
- There are contextual differences in the ways LSMs are interpreted, used and managed.

These conclusions lead Wickam and Versfeld (1998: 24) to recommend that both LSMs and teacher education should take account of teachers’ current realities. They should not be too ambitious, but should rather take a long-term view of change.

4.4.3 Teachers designing and producing LSMs

As we have already discussed, the Generic guidelines for the development of LSMs (1998) and the draft Norms and standards for educators (1998) require teachers to both interpret and produce LSMs. However, the underlying message of many curriculum documents is that teachers should create their own LSMs drawing on a wide range of resources. This message is reinforced by much teacher education that takes the position that good teachers do not use textbooks. SADTU are quoted by Vally (1999: 6) as stating that ‘teachers must be skilled and trained as materials and curriculum developers.’

Local research reveals wide disparities in teachers’ capacity to design and produce their own LSMs (Khulisa 1999: 30). Cheryl Kingdon, a member of the Gauteng Education Department’s Foundation Phase INSET team had this to say:

The implementation phase of OBE in Grade 1 has been an exciting challenge for some and a daunting nightmare for others. Many of our teachers have thrown themselves into the process with incredible energy ... They have produced excellent worksheets ... Some have designed wonderful activities through which they are consciously attempting to accommodate all the learners in their classes. However, there are also teachers who are finding the shift to OBE very difficult. (Quoted in Potenza & Monyokolo 1999: 242).

Overall, there is little evidence of teachers creating original learning materials (Taylor and Vinjevold 1999:178). In some instances, teachers think they can use the illustrative learning materials for the whole year (DoE 1999b:5).

Reasons why many teachers experience difficulty in designing their own LSMs have already been alluded to. In creating something new, teachers draw on their experience and existing practice, which may be in conflict with the new curriculum. Evaluators of an NGO Project – Learning for Sustainability – reported: ‘Project staff are indicating that while ‘new ideas, resources and different activities’ are being introduced within the project, when asked to work on learning programme units, teachers draw on their existing knowledge frameworks (which are generally

textbook driven).’ (RUEEU 1999: 23) Teachers find it difficult to apply the sort of goal directed principles required by the Norms and Standards for Educators to the design of LSMs- Teachers have problems selecting appropriate and relevant activities.

There is a sense that activities-based teaching and learning means that learners need to be busy but there is little attention to that which is relevant, appropriate and suitable for a particular grade or level. (*ibid*:28).

and

Teachers are generally unable to generate activities from resources such as newspaper articles and other resources that are not written specifically for use in schools. They tend to rely on books that provide actual activities with step by step instructions (*ibid*:37).

Taylor and Vinjevoold (1999: 145) report that teachers find it difficult to develop and sequence a learning programme: ‘Even when teachers provided learners with a mix of activities these were generally not integrated or organised sequentially in ways that assisted learners to practise the necessary concepts and skills incrementally.’ And they claim: ‘international and local research suggests that learning materials which are not structured into a comprehensive learning programme are severely limited (*ibid*: 182).’

Given this situation, it is unsurprising that a study undertaken by the School of Education, Training and Development at the University of Natal found that most teachers are not involved in the design of original learning programmes. Although teachers saw the importance of developing LSMs, this was not translated into a practical competence. The study concluded that of the six roles set out in the Norms and standards for educators, teachers’ competence as interpreter and designer of learning programmes and materials is the weakest (*ibid*: 179).

Perhaps because of this, teachers often attempt to meet the requirements of the new curriculum by photocopying worksheets from textbooks:

Teachers are not always willing to improvise and develop their own resources. They prefer illegal photocopying. Teachers are not continuously being trained to develop their own resources, such as workbooks and activity sheets which will reduce the costs and will ensure that the learning in the classroom is appropriately contextualised (DOE 1999b: 21)

Wickham and Versfeld (1998: 11) describe photocopied worksheets as the most commonly used teaching tool. One of the dangers here is that in taking materials out of the sequenced learning programme provided by the textbook, they may become decontextualised unless they are supported by an alternative programme provided by the teacher.

There are other reasons why teachers do not create their own LSMs, time being one. Potenza is reported as saying that it is unrealistic to expect teachers to develop sufficient materials for all their learning programmes since materials writing is a difficult and time-consuming process (Taylor & Vinjevoold 1999: 179). From an international perspective, Venezsky suggests that ‘teachers choose to use textbooks out of practical necessity, rather than because they are compelled to. Teachers usually do not have the time, space, background reference materials or administrative backup to design their own learning materials at school; so it would have to be done in their own time and using their own materials and resources (1992: 442)’. Indeed, textbooks allow teachers time and space to focus on other issues such as assessing learners, providing feedback and keeping student records up-to-date, activities which are demanding of time in the new curriculum.

Local evaluations reveal that time and energy is an issue. The Western Cape Evaluation (1998) noted that some teachers were creating their own materials but wondered whether the rate and degree of preparation could be maintained. They questioned whether it could be replicated in the broad population of schools, which would not have the same support and motivation as the pilot schools. Resources are also an issue: many schools lack storage and duplicating facilities,

and functioning libraries. Teachers in well-resourced schools are better able to create their own LSMs than those in schools without resources (GICD C2005 1999).

On the whole, there is little to suggest that teachers are producing LSMs in any significant quantity or quality. There is, however, some evidence that they would like to 'do their own' (WC Evaluation, p.42). Some teachers expressed the view that the system forces them to order LSMs, whereas if schools were free to use money as they saw fit, teachers could produce their own learning materials (DoNE 1999b). This, of course, is what is now happening in some provinces.

Some commentators, however, regard the pressure on teachers to produce their own materials as unnecessary. There has been criticism of the way in which C2005 training has trivialised the design and production of LSMs. There was an instance in which a Simba chip packet was used as a resource. This was seen to give the message that 'an enthusiastic and creative teacher' can create a learning resource out of any 'old junk' and that teachers should move away from being so 'textbook bound' (GETC report 1998: 57). Potenza and Monyokolo point to the problems with this:

While it is clear that teachers need to use a range of resources to be effective in their teaching, this activity reinforced a very worrying aspect of the new curriculum policy: the tendency to underplay the importance of learning materials or textbooks as a way of modelling for teachers what the new system expects of them (1999: 239).

A balanced position is that which argues that teachers should indeed produce materials but that these should be supplementary to appropriate core materials. Thus the GDE/GICD report claims: 'Teacher produced materials are a valuable supplementary resource in any classroom but does not reduce the need for professionally produced materials.... The notion that teachers will only take ownership of materials that they have produced needs to be debunked.... To develop ownership, what are needed are materials that teachers can use well and identify with. For this to happen, use of all kinds of LSM needs to be part of pre-service and in-service training.'

Monyokolo and Potenza (1999: 243) argue that it should be a long-term goal for teachers to design and produce their own LSMs. In the short term the aim should be to improve the quality of textbooks:

The argument that teachers should make the shift from an over reliance on textbooks and start using other resources make sense as a long term strategy. However in a context here the majority of schools lack basic educational resources it is not surprising that teachers tend to reply on the textbook. The answer lies not in doing away with textbooks but rather in improving the quality of them.

Good quality textbooks do, in fact, exist nowadays. The issue then becomes a matter of paying for them.

Research into teachers designing LSMs is dominated by a focus on print-based materials such as worksheets. The most readily available resource for constructing LSMs – the chalkboard – is rarely mentioned in local research. However, it has received attention internationally. The TIMMS Videotape Classroom Study revealed interesting differences in the way the chalkboard is used in maths classes in the US, Germany and Japan. The study revealed that Japanese learners in the 8th grade were one year ahead of the international average and two years ahead of US learners. There was a clear emphasis on conceptual development and problem-solving and greater lesson coherence in Japanese classes. Researchers noted the role of the chalkboard:

The chalkboard is used in a highly structured way: Teachers appear to begin the lesson with a plan for what the chalkboard will look like at the end of the lesson, and by the end of the lesson we see a structured record or residue of the mathematics covered during the lesson. In the United States, in contrast, the use of the chalkboard appears more haphazard. Teachers write wherever there is free space and erase frequently to make room for what

they want to put up next ... Analyses of erasures during lessons revealed that Japanese teachers left more information on the board (83%) at the end of the lesson than did either German or US teachers. It is interesting to consider the potential effect this practice might have on student comprehension at the end of the lesson. If information is erased, it is no longer available to the student who may need more time to process it. Having the information available throughout the lesson, in an organised fashion, may provide the crucial resource to the student.

The study also records that Japanese teachers hardly used overhead projectors (in only 3 of the 50 lessons observed). This was because of their impermanence: the whole scope of the lesson could not be available to students at one time.

In a South African classroom in a township school, similar expert and structured use of the chalkboard was observed in a mathematics class. The teacher developed her lesson across the chalkboard, skilfully using coloured chalks and posters, which she referred back to in the course of the lesson (Probyn 1998). This suggests potential for further research into the use of this widely available resource.

Another resource from which LSMs are constructed is school libraries. While there is little local research into their use, two studies (both quoted in Hart 1999:63) suggest that teachers are not used to thinking about using resources in the ways required by resource-based learning. In the first study, a survey of 21 House of Representatives schools found that 51% of teachers claimed to have made no shift in thinking about the school library in the previous five years (Frederick, 1995). In another study of 2975 teachers in 186 Western Cape schools, it was found that teachers - even when they have access to resources - do not use them (Bertams, 1995). Wickham and Versfeld (1998: 9) made similar observations in their study of four schools. Consequently, they reported no significant relationship between the existence of a school library and good teaching practice.

This raises serious questions about the information literacy of teachers. A Cape Town study found that it was possible to develop these skills in learners in disadvantaged schools, as long as the teachers were resourceful and exhibited information literacy traits themselves (Zinn in Hart 1999: 57). Similarly, the RUEEU report (1999:23) observes, 'Finding new knowledge is reliant on teachers having access to appropriate resources but also on developing the skill to find and use information from these resources.' Olen (in Hart 1999: 64) investigating the use of media by 603 Gauteng student teachers, concluded that information literacy skills need to be incorporated into the teacher training curriculum.

A number of conclusions can be drawn from the research we have outlined:

- Teachers are not designing and producing their own LSMs in quantity and quality. Production is mainly limited to reproducing worksheets reminiscent of the 'photocopier curriculum' described by Cope and Kalantzis (1993: 6).
- Factors which constrain teachers are: their own limited knowledge frameworks; lack of time and other resources such as school libraries and storage facilities.
- Even when school libraries are available, teachers do not necessarily use them, suggesting the need to develop their own information literacy in order to implement resource-based learning.
- Contextual factors affect teachers' views: some would like money to be diverted from textbooks to enable them to create their own LSMs.
- Research needs to be carried out into resources used to create LSMs other than print materials, especially the chalkboard and school libraries.

These findings have led some researchers to recommend that in the short term teachers need access to quality LSMs which structure learning programmes and model the new curriculum. At

the same time, they need support and encouragement to develop their own supplementary learning materials.

4.4.4 Teachers evaluating LSMs

From our discussion above, it seems likely that teachers will continue to need ready-made LSMs in the short term, even if they move towards developing supplementary materials themselves. With this in view, the issue of teacher selection and evaluation of LSMs is critical.

There are now more books available to teachers than ever before, and those provinces which still have approved lists, do not limit the number of titles on them. But teacher selection is problematic and has been criticised by the DOE's Learning Support Material Initiative in Support of the Provincial Departments of Education: a curriculum and quality perspective (August 1999) for:

- Not giving teachers enough time to make informed choices at book exhibitions.
- Not training teachers to select materials and make appropriate choices.
- Expecting teachers, in some provinces, to select from a list without actually seeing the books.
- Ignoring teachers' orders and sending books they did not request.

Reynolds (1997), studying how teachers choose school textbooks, found that the selection process was superficial and haphazard. In a third of the schools surveyed, choices were made blind from the lists. The predominant attitude of teachers towards textbook selection was passive and uncritical. She considers this to be because they lack textbook literacy and are unfamiliar with the skills and language of textbook evaluation. She notes that teachers claimed to have had little or no pre-service training in textbook evaluation, and that their training had disparaged textbooks. She points to the negative effect it will have on the quality of textbooks, if teachers are unable to distinguish between good and poor quality, and publishers do not have a critical informed audience. Furthermore, if teachers are unable to evaluate published LSMs, it is unlikely that they will be able to assess the quality of those they have produced themselves.

Education and training is once again an issue. The GETC report on the implementation of C2005 in Gauteng (1998: 13) calls for the training of teachers in the selection of learning materials. No colleges (to our knowledge) offer pre-service training in book evaluation and in-service training is still considered inadequate. The GDE/GICD LSM task team report notes that pre-service training in many colleges continues to ignore evaluation and use of LSMs in the classroom. In the past education-related NGOs might have done much of this training, but many have closed down owing to lack of funds. The Teaching and Learning Resource Centre based at UCT, for example, does offer training in book evaluation but not in the use of new materials, and this task has fallen to publishers, who effectively supplement the work of departments by training teachers in the methodology and principles of C2005.

While publishers can be criticised for promoting their own materials rather than the best available, the argument is mitigated if the materials used embody OBE principles. But despite active seminar efforts, publishers themselves estimate that they are only reaching 10% of teachers. That said, at least three of the provinces have some kind of training in evaluation skills, and at least one province, KZN Education Dept has raised funds from USAID, for a two year project to train 2000 teachers in book evaluation skills in 150 schools.

Although checklists have been developed for provincial evaluation of LSMs (DoNE 1997, reproduced in Reynolds 1997:131), none have been made widely available to teachers. In addition, the Generic Guidelines for the Development of LSMs for OBET provide a detailed set of criteria (29 pages) for production and evaluation of LSMs. However, their very length makes them unwieldy and difficult to use. Also, the fact that they are generic means that they could

encourage teachers to focus on relatively superficial issues rather than, say, whether a grade 4 numeracy textbook is sound in terms of its content and develops mathematical concepts in pedagogically well-founded manner. The criteria for doing this are likely to be different in some ways from those for textbooks in other learning areas.³⁵

Shalem and Slonimsky (1998) have pointed to a general problem with criteria. Teachers must share the knowledge which informs criteria, if they are to be able to use them. Criteria in and of themselves are no use without this knowledge. Applying this insight to textbook evaluation, Murray (1998) has argued that to become textbook literate, teachers must be exposed to a wide range of textbooks, and have the opportunity to work with them, compare and discuss them in relation to their own criteria and those of others. It is only in this way, that criteria will have meaning for teachers.

We can conclude:

- Teachers generally do not have wide experience of textbooks and other LSMs and have not been trained to evaluate them. Consequently they find the practice of evaluation and selection difficult.
- If LSMs are not selected on the basis of quality, there will be little inducement for publishers to invest the money necessary to research, trial and produce good quality textbooks.
- Straightforward guidelines have not been provided for teachers to evaluate LSMs.
- Evaluation criteria on their own are not sufficient. They must be accompanied by wide experience of LSMs.

4.4.4 Teachers as interpreters, designers and evaluators of LSMs

There are general conclusions which can be drawn from this section. In South Africa's racially stratified education system, teaching practices are constructed differently in different contexts. Access to resources – material, intellectual and linguistic – plays a role in their construction. These different sets of practices become taken for granted, or what Wickham and Versfeld describe as 'coded'; teachers are seldom conscious of them, they are part of their 'worldview.'

As we discussed in Section 1 of the Report, curriculum and materials developers typically do not share the same worldview as most teachers. Unsurprisingly, then, when new LSMs are introduced into the classroom teachers make sense of them in terms of their existing practice and mediate them accordingly. If they cannot see a way to make them fit, they might not use them at all. On the other hand, teachers who share the experiences and privileges of materials developers, have already developed the practices necessary to create their LSMs using limited resources. If this goes unrecognised, disparities are likely to grow larger rather than smaller.

To facilitate curriculum change, LSMs have to engage with teachers' current practice, strengthen their existing knowledge and scaffold new kinds of pedagogy. At the same time teachers need support and guidance to engage in activities – such as creating their own supplementary materials using library resources – that will develop in them the kinds of cognitions and skills required to autonomously interpret, design, evaluate and manage LSMs.

Finally, all this is unlikely to become deeply rooted new practice, if the teacher is the only focus of attention. Good school management and a supportive and efficient provincial education departments are essential. Change of this nature is unlikely to take the form of an overnight paradigm shift; it is more likely to be the result of focused, well-planned and sustained programmes of implementation.

³⁵ Some useful books have been published locally on materials development and evaluation- for example - Hutton 1989; USWE 1998; and Versveld and Press 1998.

5. Conclusion

Throughout this discussion of LSMs and their role in supporting the implementation of C2005 there has been a visible tension between quality and feasibility. The discussion has returned over and over again to the ways in which globalisation both drives the new curriculum and constrains its equitable implementation. The urge towards educational quality and towards OBE in its most advanced and expensive form is continually constrained by the climate of austerity in which it takes place.

Limited resources have to be distributed equitably and effectively throughout what is presently a highly differentiated system where well-resourced schools and provinces are in a better position to support OBE. Thus the importance of resources and capacity is repeatedly highlighted.

Yet this is a complex issue. The new curriculum derived from wealthier developed countries has set up unrealistic expectations regarding LSM provision. This is exacerbated by a situation where the average local government school aspires to the resources of its more privileged counterpart, where some teachers feel paralysed without resources, and where policy statements confuse the issue by suggesting that resources are unnecessary.

We need a long-term strategy that works with what is possible in terms of resources and capacity. On the one hand we have to remain cognisant of tightened purse strings, and thus acknowledge the need to focus on increased efficiencies as applied to LSM issues. The development of imaginative ways of doing things better and using limited budgets creatively must be rewarded. Examples already exist such as the tidying up of malfunctioning systems and improving delivery mechanisms. Given that there is never enough money, what cash is available must be used as wisely as possible.

At the same time we are concerned that official C2005 policy documents do not take sufficient cognisance of resources and capacity in the form of either physical LSMs or teachers' abilities. Insufficient attention has been paid to the way that resources and capacity themselves construct classroom practices and thus the curriculum itself. An under-resourced OBE - in terms of both the provision of appropriate materials and inadequately prepared teachers struggling to create their own materials - could lead to a poorly structured photocopier culture and a worksheet curriculum.

5.1 Inter-relatedness and integration of LSMs

We have also seen that a discussion of LSMs and OBE has not been possible in a uni-dimensional way. It has been important to locate the discussion in the broader economic and political terrain which provides the impetus for OBE. And it has also been essential to link the discussion of LSMs with factors such as teacher support and development, resource management, whole school development, intra- departmental co-ordination issues as well as other features of the required enabling environment.

Thus an LSM led curriculum change is only likely to work in a holistic setting where interrelated factors are taken into consideration and various aspects of implementation need to be 'in sinc'.

While many of these related issues are each being addressed in their own right, we are concerned that the role and value of LSMs is being downplayed, ignored or forgotten in related campaigns and programmes. COLTS ³⁶ campaign and school management development programmes, to mention just two examples, should incorporate LSM-related components.

³⁶ Culture of Learning and Teaching in Schools

While we have noted lack of clarity both about the nature and the roles of LSMs in the range of educational policy documents we scanned, we believe that discussions of LSMs extend beyond even curriculum and education. LSM and resource provision issues extend to those of culture, economics and social development. Thus a discussion of LSMs includes a wider range of role players than is evident at first glance.

Within the educational arena LSM issues need to be integrated in a range of ways:

- *Within policy documents*
While standardisation is not an aim due to the specifics of each policy, a shared and more detailed understanding of LSMs is required across educational policy documents.
- *Within schools*
What is important here is that every player within a school - SGBs, principals, parents, teachers, learners, and communities in which the school is located - understands their role and responsibility with regard to the selection, use and management of LSMs.
- *Within government*
The need for increased intra-governmental co-ordination is an aspect that has already been acknowledged and acted upon by government over the last year. It is to be hoped that this will create a better understanding of the processes of book and LSM development as well as more co-ordination of inter-related policies which impact on LSM development across the different levels of government, from national and provincial across to regional and district.

Therefore co-ordinated book, materials and literacy policies are needed at the most senior level. Also, for a healthy and vibrant reading culture and a literate citizenry to exist, LSM related issues need to extend beyond the state. Support for the existence of a healthy and diverse publishing industry is essential, as is a mutually respectful partnership between the private sector, government and schools.

This would involve, inter alia, paying attention to such issues as

- Rethinking LSM purchasing policies and procedures
- Technology and its potential contribution.
Although presently technology is an example of the abyss between the have's and the have nots, it paradoxically offers potential solutions as a way of overcoming problems of access, language and so on
- Language policies

How best the integration of LSMs and other issues can be ensured will require thought and attention. Elsewhere in Africa, Book Development Councils have been set up to ensure that the need for policy-making, planning and management is recognised and to keep in focus the larger book development picture, one that does not stop at the school gate but extends across the breadth and depth of society. This may not be the most suitable mechanism in the South African context, partly because our understanding of LSMs extends beyond books (especially textbooks), but also because attempts in recent years to start a South African Book Development Council failed, primarily, it seems, due to lack of finance and sustainability.

There is clearly a need for mechanisms and specific portfolios to ensure that lobbying around LSMs continues on a regular basis. This is because LSMs are clearly central both to national development in general and to progressive education, as well as to the success of OBE in particular.

5.2 LSMs central to OBE and better education

OBE involves more than a progressive learner-centred approach to teaching and learning. It also involves the use of a resource based approach to learning, a commitment to the development of information literacy skills as well as the provision of an environment in which lifelong learners flourish.

What emerges from this Report is that LSMs are absolutely essential to any kind of education which involves literacy. Literacy requires LSMs and neither basic literacy nor information literacy is possible without LSMs. Furthermore, information literacy can only be developed on the foundation of strong basic literacy, yet literacy levels are profoundly worrying in South Africa.

Thus any version of a progressive curriculum would seem to require more LSMs not less and more teacher development not less. It is clear that in order for OBE to succeed, indeed for a minimum standard of reasonable education to occur, access to a minimum amount of LSMs is a basic pre-condition.

In addition, because the various contexts in which curriculum policies are played out are characteristically different, appropriate LSMs need to meet the objectives of the curriculum in different ways. Where resources are scarce and budgets stretched, LSMs need to be of the best quality and be supremely effective in providing scaffolds for learning and teacher support.

5.2.1 Minimum guaranteed expenditure on LSMs

In order to 'make that which is not yet made'³⁷ we need to pay attention to the inputs required to achieve educational outcomes. While inputs will be wasted if certain key elements are not in place (such as good school management, teachers and learners in class and so on), outcomes simply cannot be achieved without inputs. The gap between the goals of C2005 and situation on ground cannot be reduced without resources. Appropriate skills have to be developed and sufficient money spent.

The provision of sufficient suitable LSMs will always cost money whether from the state, parents, private sector or donors. Even the creation of LSMs by teachers costs money in the form of teacher training as well as the process of turning raw resources into materials that support structured learning.

Clearly there must be a minimum amount of money guaranteed to be spent on LSMs. Although suggestions are made within this Report based on the writers' knowledge and experience, proper attention needs to be paid to the calculation of exactly what the minimum financial requirements for LSM provision are.

If the state is unable to provide this minimum funding for LSMs, alternative providers must be targeted. Problematic as this is, it might include parents. Presently the LSM retail sector is not set up to distribute materials via parents, and this would need addressing.

Fund-raising may also include a major campaign to focus corporate grant-making on LSMs. At present this sector does not even include an LSM category despite education receiving the highest percentage of its funding. It may require increased pressure and the lobbying of donors to purchase and donate local books to classrooms and needy school libraries.

More attention needs to be paid to state funds. While the Norms and Standards legislation is a step towards redistribution and redress, it is problematic for two reasons: because there is too

³⁷ as Harley and Parker, 1999: 98 put it

little money in the pot and because there is no guarantee that specific expenditure is earmarked for LSMs.

Quite simply, more money needs to be allocated to LSMs if OBE is to succeed and if education is to improve. In addition, allocated state funds for LSMs need be more clearly focused and strictly controlled to ensure that they are actually spent on LSMs rather than on debts or other items. This might involve 'ring-fencing' funds at the national level, or at the provincial level. It might mean specifying that devolved funds are actually to be spent on LSMs, currently part of a broad category.

5.2.2 Provision of appropriate textbooks

This Report has expressed a concern about the simplistic dichotomy drawn between the old traditional system of education (which implies that textbooks and teacher driven approaches reign supreme) and new, progressive, anti-textbook perspectives. Rather than discarding the best of the old, it should be incorporated as a strong foundation of what teachers already know and can do well.

As one established teaching strategy is the use of textbooks, providing both teachers and learners with better textbooks than those used in the past will allow for a familiar medium to develop new practices. They have several advantages especially during times of curriculum transition and educational change. They can provide structure to new ideas; they can suggest ideas about the use of supplementary local resources and teaching methods; they can provide content. They can provide a 'big picture' plan showing how individual lessons fit into an overall learning programme. They can save time on lesson planning and can allow teachers to focus on other relevant activities.

While this may be perceived as watering down of OBE, it seems appropriate to many local situations in the short term. Certainly we have noted a trend amongst current classroom researchers to recommend textbooks that support teachers and learners in this difficult transitional stage which many teachers find unpredictable and stressful.

In the absence of adequate library facilities, the purchase of good, supportive, appropriate textbooks and reading materials to support basic literacy is the basic minimum required to support RBL. However, adequate provision will still cost a great deal more than has been spent annually on LSMs over the past four years.

5.2.3 Support for school and public libraries

Yet the imperatives of OBE cannot be abandoned. Information literate citizens are still needed. Redress is still urgent. While textbooks may have many advantages, they are not enough. School and public libraries are still crucial even if sufficient textbooks are provided.

Libraries are important for both learners and teachers in providing reading materials to support basic literacy and resources for resource-based learning and the development of information literacy. Research in this Report has indicated that many teachers don't use libraries themselves, or know how to structure tasks which involve using a library. While the relationship presently tends to be between learners and public libraries, teachers need to work closely with librarians to learn how to use this resource to develop enjoyment of reading and information literacy - both essential to lifelong learning.

Although the results of the school libraries Audit are still awaited, indications are that the library situation is poor, stretched or non-existent. As a matter of urgency the draft school library policy recommendations need to be ratified and implemented. This policy recognises the varying starting points in different schools, and offers a range of possibilities from which each school can move forward.

It is also important that the role of public libraries in supporting OBE implementation is acknowledged. There is a case for district meetings that start to build relationships between stakeholders: school librarians, public librarians, SGBs, principals, booksellers. Over-extended library services in urban areas need support and the needs of rural users should be addressed.

5.3 LSMs, teacher development and support

Teachers need both access to resources and training in order to best implement OBE. C2005 needs information literate teachers who can work with resources. It expects them to be able to create LSMs and learning programmes in resource-poor environments. People acquire these literacies in communities and through interaction with resources. It is this interaction with resources that develops the high order cognitions and skills fundamental to information literacy. It is only when teachers are information literate that they can create resources from what is around them. This results in the paradox that it is most likely to be teachers from privileged backgrounds who are best able to create their own LSMs in under-resourced environments.

The introduction of a minimum sufficient amount of LSMs based on the new curriculum principles can only be effective if it occurs simultaneously with teacher development. In this way teachers can understand both the pedagogical principles underpinning the new approach as well as the specific use of new materials.

Concerns expressed about the cascade model of teacher development suggest that it is having a 'broken telephone' effect. All indications are that the most effective teacher development in the use of new materials is hands-on within schools and that appropriate training should be classroom-based, differentiated, focused and targeted.

What is needed is a teacher education approach that starts where teachers are at, with LSMs that are in their zone of proximal development³⁸. They should be sufficiently familiar that teachers feel comfortable with them, but sufficiently unfamiliar that they help teachers to reflect on their existing practices and move towards OBE practices. These LSMs need to scaffold and provide temporary support for new learning. Such a constructivist approach recognises that teaching is a social practice and change is incremental rather than an overnight experience.

Teachers also require programmes to support book evaluation, book selection as well as the development of their own materials. It has also become clear in this Report that many teachers need to upgrade their own language, reading and information literacy skills so that they can use and interpret materials better. For this to occur they need both training as well as access to a wide range of printed materials.

5.4 Need for a better understanding of LSMs

Surveying the research related to LSMs has also provided an indication of how much we don't know. We have commented on the lack of large surveys in South Africa and the fragmented and limited research on what happens in classrooms.

³⁸ The zone of knowledge where it is possible, with support, to make sense of new ideas from which to develop new skills.

We need to know more about what actually goes on in classrooms with regards how teachers currently use LSMs. We need to establish research priorities and develop rigorous forms of evaluation. We also need greater clarity on the role of LSMs in curriculum change. How do LSMs operate as tools within a social constructivist frame? How do they make certain kinds of activities possible from which new cognitions, literacies and practices can develop? What is the role played by language in the comprehension of LSMs and the development of literacy? What literacy practices currently exist in schools and communities? Are suggestions that the shaky implementation of OBE seems to be undermining the development of initial literacy accurate?

And finally, we need to get away from either/or solutions such as English v African languages and textbooks v teacher education. With a better understanding of contextual differences and a critical understanding of the disparities in our racially differentiated education system; with high quality, rigorous research; with flexible plans; with constantly monitored and responsive use of information feedback; we can get from where we are now to where we want to be. Through this process we will see the emergence of a beneficial curriculum and appropriate LSMs to go with it.

References

- Alexander, N. 1999. 'English unassailable but unattainable: The dilemma of language policy in South African Education'. Paper presented at the ELET Conference, University of Natal, August.
- Altbach, P. G. and Kelly, G. P. (eds) 1988. *Textbooks in the third world*. New York, Garland Publishing Inc.
- Alferys, H. 1988. A critique of the DET Matric English language syllabus of 1988 on theoretical, sociological and innovatory grounds. Honours dissertation, University of the North West.
- Anon. 1999. <http://stemnet.nf.ca/-acrawfor/lrc2.htm> Nov 11.
- Apple, M. W. and Christian-Smith, L. K. (eds) (1991) *The politics of the textbook*, New York, Routledge.
- Asmal, K. Edusource No 23, 1998.
- Asmal, K. 1999. a 'Call to action: mobilising citizens to build a South African education and training system for the 21st century'. Statement on Tuesday 27 July 1999.
- Asmal, K. 1999. b Pan-African Conference on Children's Reading
- Asmal, K. c Cape Times 16 November 1999 p. 4
- Australian School Library Association and Australian Library and Information Association. 1993. 'Learning for the future: developing information services in Australian schools'. Curriculum Corporation, Policy Statement - Resource Based Learning and the Curriculum. Adopted November 1994. ; http://www.w3c2.com.au/asla/p_rbl.htm
- Author un-named. 1999. <http://www.nhps.net/main/curriculum/library/media-technology/techlit/mediaservices/index.htm> Downloaded 11 November 1999.
- Baxen, J. and Soudien, C. 1999. 'Outcomes-based education: Teacher identity and the politics of participation'. In Jansen & Christie. 131-144.
- Bot, M. and Shindler, J. 1997. 'Education 2000 Report on Baseline Data' 1991-1996
- Bot, M and Shindler, J 1999 Macro-Indicators 1997: Update of Baseline Study CEPD Education 2000+
- Bot, M. 1993. 'Language use in schools: A survey of teachers' opinions'. Edusource Data News, 3, 1-9.
- Bot, M. 1999. Edusource Data News, p. 3.
- Brown, D. 1998. *Education policy and the choice of language in linguistically complex South African schools*. Durban: Education Policy Unit (Natal).
- Butcher, N. 1998. 'The possibilities and pitfalls of harnessing ICTs to accelerate social development: a South African perspective' www.saide.org.za 1998
- Cazden, C.B. 1994. Language, cognition and ESL literacy: Vygotsky and ESL literacy teaching. *TESOL Quarterly*, 28 (1), 172-176.
- Christie, P. 1999. 'OBE and unfolding policy trajectories: Lessons to be learned'. In: J. Jansen & P. Christie (eds) *Changing curriculum: Studies on outcomes-based education in South Africa*. Cape Town: Juta, 279-292.

- Claasen, J. 'Learning Support Materials in OBE'. In: Pretorius, F. (Ed) 1998. *OBE in SA*. Hodder and Stoughton
- Cope, W. and Kalantzis, M. 1993. *The powers of literacy*. London: Falmer Press.
- Cornbleth, C. 1990. *Curriculum in context*. London: Falmer press.
- Corporate Social Investment and Development Handbook. 1999.
- Crouch, L. and Mabogane, T. 1997. 'Key numerical Indicators 1991-1996'. Summary Report compiled based on commissioned report by Bot, M. Education 2000+
- Cuban, L. 1997. 'School reform: The riddle of change and stability'. In Kogan, B. S. (ed) *Common schools, uncommon futures: A working consensus for school renewal*. New York: Teachers College Press.
- Czerniewicz, L 1998. Developing a framework for education policy analysis; the case of the Western Cape's textbook procurement policy Unpublished MPhil dissertation UCT
- Czerniewicz, L. 1999.a 'Information Literacy in Western Cape Schools'. Report to the Adamastor INFOLIT Project of the Adamastor Trust.
- Czerniewicz, L. 1999.b 'The changing face of the educational publishing industry'. In *The Printing and Publishing Handbook*.
- Dachs, T. E. 1998. 'Large-class teaching: a pilot study of eight grade 5 classrooms in Kwazulu-Natal'. Prepared for JET.
- Dale, R. 1992. 'Whither the state and education policy'. Recent work in Australia and New Zealand. In: *British Journal of Sociology of Education* Volume 13 No.3
- Darling-Hammond, L. 1997. *The right to learn: A blueprint for creating schools that work*. San Francisco: Jossey-Bass Publishers
- Deacon, R. and Parker, B. 1999. 'Positively mystical: An interpretation of South Africa's outcomes-based National Qualifications Framework'. In: Jansen & Christie, p59-76.
- Department of Arts and Culture. White Paper on Language : Preparing for a multilingual future. NO DATE.
- Department of National Education a Distance Education Quality Standards Framework for South Africa, Discussion Document Prepared by the Directorate: Distance Education, Media and Technological Services, Department of Education, Pretoria NO DATE.
- Department of National Education b. 'National Audit of Computers in Schools' draft, being completed by UWC EPU
- Department of National Education d. Access to Learning Support Materials in Terms of Language. NO DATE.
- Department of National Education e. Development of Learning Support Materials. NO DATE.
- Department of National Education. 1995 a. 'CFC Working Group Draft proposals of the CFC Working Group 1'.
- Department of National Education. 1995 b. 'Life-Long Learning through the National Institute of Life-Long Learning Development' and 'The Provincial Institutes of Life-Long Learning Development'. Final draft 22 December.

- Department of National Education. 1996 a. 'Life-Long Learning through A National Qualifications Framework (NQF)'. A discussion document report of the 'Ministerial Committee for the Development Of Work on the NQF'. February.
- Department of National Education. 1996 b. The Technology Enhanced Learning Initiative (TELI) Policy Framework.
- Department of National Education. 1997 a. Curriculum 2005 Intermediate Phase (Grades 4 - 6) document.
- Department of National Education. 1997 b. Curriculum 2005 Senior Phase (Grades 7 - 9) document.
- Department of National Education. 1997 c. Curriculum 2005 Foundation Phase (Grade 1 -3) document.
- Department of National Education. 1997 d. 'The National Institute for Life-Long Learning Development (NILLD): A Concept Document'. October.
- Department of National Education. 1997 e. Information handout. p.47
- Department of National Education. 1997 f. 'A National Policy Framework for School Library Standards'.
- Department of National Education. 1997 g. 'Curriculum 2005 : Lifelong Learning for the 21st Century'. CTP Books. Department of Education Booklet for Teachers.
- Department of National Education. 1997 h. 'Evaluation Report C2005 Trials : National Evaluation and Monitoring of the Trial of Curriculum 2005 and OBE in Provincial Pilot Schools in South Africa'. 7 November.
- Department of National Education. 1997 i. Language-in-Education Policy.
- Department of National Education. 1997 j. Outcomes based education in South Africa : background information for educators.
- Department of National Education. 1997 k . Report of the National Committee on Further Education : 'A Framework for the Transformation of Further Education and Training in South Africa'.
- Department of National Education. 1998 a. 'Generic Guidelines for the Development of Learning Support Materials for Outcomes Based Education and Training'.
- Department of National Education. 1998 b. 'A National Policy on School Library Standards'. Discussion Document
- Department of National Education. 1998 c. 'The Language-in-Education Implementation'.
- Department of National Education. 1998 d. Education White Paper 4 - A Programme for the transformation of Further Education and Training.
- Department of National Education. 1998 e. Technical Committee on the Revision of Norms and Standards for Educators: Norms and Standards for Educators'.
- Department of National Education. 1998 f. The Further Education and Training Act.
- Department of National Education. 1998 g. The Further Education and Training Green Paper.
- Department of Arts and Culture. 1999 a. 'The Language Plan for South Africa : The promotion and implementation of multilingualism'.

- Department of National Education. 1999 b. 'Learning Support Material Initiative in Support of the Provincial Departments of Education: a curriculum and quality perspective'.
- Department of National Education, 1999 c. The Strategic Framework for Reviewing and Modernising Further Education and Training Programmes : a working document. July.
- Department of National Education. 1999 e The National Strategy for Further Education and Training (FET) 1999 - 2000, Preparing for the Twenty-First Century Through Education, Training and Work.
- Department of Education and Culture : Province of KwaZulu Natal. 1999. 'Fax: Cost-Cutting Strategies in Respect of Learner Support Materials to Meet Budgetary Limitations'. 19 October.
- Duncan in Taylor and Vinjevold
- Edusource No 21. 1998. (July)
- Edusource Data News no 25 July 1999
- Edusource Data News no 26 Sept 1999
- Elley, W. B. 1992. *How in the world do children read?* The Hague, The International Association for the Evaluation of Educational Achievement.
- Ellis, R. 1985. 'Interaction and learning in the classroom'. In : 'Language in education in Africa'. Seminar proceedings number 26, held in the Centre of African Studies, University of Edinburgh, 29 and 30 November.
- Enslin, P. 1999. *Education for liberal democracy: Universalising a western construct?* Journal of Philosophy of Education, Volume 33 Number 2, p 175-186.
- Farrell, J. P. and Heyneman, S. P. (eds) 1989. *Textbooks in the developing world: economic and educational choices*. Washington, The World Bank.
- Flanagan, W. 1995. 'Constraints on quality primary education in South Africa'. Paper presented at the National Primary Education Conference, Northern Province Department of Education, Magoebaskloof Hotel, February.
- Fuller, B. 1986. 'Raising school quality in developing countries : what investments boost'.
- GDE/GICD Gauteng Department of Education and Gauteng Institute of Education Development. 1999. 'LSM Task Team final Report'. 31 March.
- Gauteng Education and Training Council (GETC). 1999. 'Focus on curriculum 2005 Phase One: report on the implementation and development of Curriculum 2005 during 1988'. Feb.
- GDE/GICD Learning Support Material Task Team Report. 1998
- GICD Evaluation of Curriculum 2005 and outcomes based education in Gauteng Province. 1999. March.
- Gordon in Hofmeyer, J and Perrold, H (Eds.) 1999 *Education Africa Forum*
- Gultig, J. 1999. 'There is nothing so practical as a good theory.' Rethinking the role of theory and practice in South African Teacher Education. *Perspectives in Education*, Volume 18, Number 1. p 55-80.
- Guskey, T. R. 1995. 'Professional Development in Education'. In : Guskey, T. R. and Huberman, M. (eds) *Professional Development in Education*. New York, Teachers' College Press.

- Hambleton, A.E. and Wilkinson, J.P. 1994. 'The role of the School Library in Resource -Based Learning'. SSTA Research Centre Report. <http://www.ssta.sk.ca/research/instruction/94-11.htm> Downloaded November 1999
- Harley, K. and Parker, B. 1999. 'Integrating differences: Implications of an outcomes-based National Qualification Framework for the Roles and Competencies of Teachers'. In Jansen & Christie. P. 181-200.
- Hart, G. 1999. 'Project Work as a Vehicle for Information Literacy Education in Disadvantaged Schools'. Unpublished dissertation. March.
- Hendricks, N. and Samuels, J. 1997. 'Generating Standards and the National Qualifications Framework: A critical reflection'. A paper presented at the Kenton-at-the-Gap Conference, Hermanus, 31 October - 2 November. p. 11-12.
- Heneveld and Craig, 1996. *Schools Count: World Bank Project designs and the quality of primary school education in sub-Saharan Africa*. The World Bank.
- Hooper, V. and Hooper, T. 1999. Contract to INASP on 'Public Libraries in Community Information Services in South Africa'. August.
- Howie, S. and Hughes, C. 1998. 'Mathematics and science literacy of final-year students in South Africa'. A report on South African students in the TIMSS. Pretoria: HSRC.
- Hungwe, K. 1994. 'A decade of science education in Zimbabwe (1980-1990): nationalist vision and post colonial realities'. *Journal of Curriculum Studies* . Volume 26 Number 1 p. 83-95.
- Hutchinson, T. and Torres, E. 1994. 'The textbook as agent of change'. In :*ELT Journal* Volume 48 Number 4. October.
- Hutton, B. 1989. *A manual for writers of learning materials*. Cape Town: Buchu Books.
- Inter-Ministerial Working Group. Draft report on the Library and Information Services (LIS) Function (National Level).
- Jansen, J. 1997. Why OBE Will Fail. March.
- Jansen, J. 1999. 'Setting the scene: Historiographies of curriculum policy in South Africa'. In: Jansen, J. and Christie, P. (eds) *Changing curriculum: Studies on outcomes-based education in South Africa*. Cape Town: Juta. 3-20.
- Johnsen, E. B. 1993. *Textbooks in the kaleidoscope: a critical survey of literature and research on educational texts*. Oslo, Scandinavian University Press.
- Jujuju. 1999 quoted in *The Teacher/ Edutech Puisanao* October 1999. p.12.
- Kgobe, P. 1999. 'Monitoring and Evaluating Policy Implementation and Transformation: An Overview of the Project'. Education 2000 Plus Conference.
- Khulisa Management Services and MBM Change Agents Evaluation of C2005 and OBE in Guateng Province . 1999 March 19.
- Killian, N. 1999. 'Resource-Based Learning and Modern Languages: The Delivery Of Resource-Based Learning'. www.linguanet.org.uk/research/resfor2/killian.htm
- Kingdon, C. 1999. Quoted in Potenza & Monyokolo. p242.
- Kingwill, P. 1998. *Transforming language education in Southern Africa: A History Of The Molteno Project 1975-1996*. Braamfontein, Molteno Project.
- Kraak, A. 1998 Competing education and training policies Pretoria HSRC

- Kraak, A. 1999. 'Competing education and training policy discourses: A 'systemic' versus 'unit standards' framework'. In Jansen and Christie. P. 21-58.
- Krashen, S. No date. Rationale for resource-based literacy education. Unpublished paper prepared for READ, Johannesburg. 6 pages.
- Kromberg, S. et al (eds) 1993. *Publishing for democratic education*, Johannesburg, The Sached Trust.
- Krut, O (1993) 'Introduction', in Kromberg S et al, *Publishing for a democratic South Africa*, Johannesburg, The Sached Trust.
- Langhan, D.P. 1993. *The textbook as a source of difficulty in teaching and learning*. Pretoria: HSRC.
- Le Roux, N. and Schollar, E. 1996. 'A Survey Report on The Reading and Writing Skills of Pupils Participating in READ programmes'.
- Learning Resources Council. A Special Interest Council of the Newfoundland and Labrador Teachers Association. No date. 'What is Resource based learning?' . ? <http://stemnet.nf.ca/-acrawfor/lrc2.htm>
- Lewin, K. 1990. 'Counting the Cost of Teacher Education: Cost and Quality Issues'. *Perspectives in Education*, Volume 18, Number 1. p7-34.
- Lor, P. J. 1998. 'Memorandum on the State of Libraries in South Africa'. March.
- Lockett, K. 1990. B.Ed research paper in 'Language, Society and Education'. University of Cape Town.
- Macdonald, C.A. 1990. *Crossing the threshold into Standard Three*. Pretoria: HSRC.
- Macdonald, C.A. 1988. Language in the primary school. Unpublished address delivered to the Curriculum and Examination Council, Mafikeng, 6 October.
- Malcolm, C. 1999. 'Outcomes-based education has different forms'. In : Jansen and Christie. p77-113.
- Manitoba Education and Training. 1999. Statement and original model graphic. Created May 1994 . Downloaded November .
<http://www.resd.mb.ca/programs/curriculum/libraries/Resource.Based.Learning/RB/index.html>.
- McCallum, K. 1995. 'Educational publishing: A practical look at language policies'. In : Heugh, K., Siegruhn, A. and Pliddemann, P. *Multilingual Education for South Africa*. Johannesburg: Heinemann.
- McCallum, K. 1999. pers comm.
- McKensie, J. 1997. 'In Defense of Textbooks, Lectures and Other Aging Technologies'. In: *From Now On* .Volume 6. Number 8. May.
- Media in Education Trust , Session 3, Resource 1. 'Curriculum 2005, Differences between Traditional and Outcomes Based teaching; Curriculum 2005: South African Education for the 21st Century'.
- Ministerial Committee for Development Work on the Role of Technology that will Support and Enhance Learning, 1996, Pretoria. Quoted in Butcher.
- Mnisi, P. 1999. Research in progress for the NCCRD, Pretoria.

- Mohamed, R. 1999. Critical responses to 'Why OBE will fail.' In : Jansen and Christie. p171-180.
- Molteno Project Chairman's Report. 1998.
- Molteno. 1999. The straight-for-English policy in Zambian schools was seriously problematic - states Zambian educators. In: D. Barnard & Y. Terreblanche (eds) e-Prodder Mail No. 124, 19 July.
- Motala, S. ,Vally, S. and Modiba, M. (Eds) 1999. *Quarterly Review of Education and Training in South Africa*. September 15. Volume 6. Number 3.
- Muller, J. and Taylor, N.1993. 'Into other wor(l)ds: curricular knowledge in the making'. In: Taylor, N. (ed). *Inventing knowledge*. Cape Town: Maskew Miller Longman.
- Murray, S 1998 Delivering quality materials to learners and teachers. Unpublished article
- National Information Technology Forum (NITF). 1998. Multi-purpose Community Centre Research report www.sn.apc.org/nitf/mpcc
- Ndlovu, D.T. 1993. An analysis of the implementation of the communicative approach in the secondary schools in the Pietermaritzburg Circuit No. 1 of the DET. MEd thesis, University of Natal.
- Nekhwevha, F. 1998. 'OBE as an educational transformation strategy for the 'New' South Africa: An evaluation of some critical areas'. In: van der Vyver, J. (ed) *Facing the millenium: Education at/on the edge*. A selection of papers from the joint KEA/SASE Conference. Volume 1. p. 25-36.
- New Haven Pubic Schools. No date. Resource-Based learning. Downloaded November <http://www.nhps.net/main/curriulum/library/media-technology/techlit/mediaservices/index.htm>
- Nkosi, L. 1981. Tasks and masks: Themes and styles of African literature. Harlow, Essex: Longman.
- Omwu. 1999. In : Taylor and Vinjevoold. p 176.
- PASA. 1999. 'Memorandum to members'. November 4.
- Potenza, E. and Monyokolo, M. 1999. 'A destination without a map: Premature implementation of curriculum 2005?' In : Jansen, J. and Christie, P. (eds) *Changing curriculum: Studies on outcomes-based education in South Africa*. Cape Town: Juta. p231-245.
- Pretorius, F. (ed) 1998. *Outcomes-based education in South Africa*. Randburg, Hodder and Stoughton.
- Prinsloo, M. and Bloch, C. 1998. 'School is where you learn to read : Early literacy learning in the lives of South African children'. Paper presented at the Kenton/SASE Conference, Kei River Mouth, October.
- Probyn, M. 1995. 'Exploring a myth'. Unpublished paper.
- ProbynM (1988) Teachers' voices: teachers' reflections on teaching through the medium of English as a second language, unpublished MSc dissertation, Oxford University.
- Proctor A and Monteith M (1993) 'Textbooks, corruption and curricula', in Kromberg S et al, Publishing for a democratic South Africa, Johannesburg, The Sached Trust.
- Pyle and Smythe in Taylor and Vinjevoold.

- Queens University tutorials. No Date. Benefits of resource- based learning <http://stauffer.queensu.ca/infore/tutorials/rbi/rbiben.htm> Downloaded November 1999.
- READ. 1998. 'No South African Pupil Should Fail Matric'. READ Feb.
- Reeves and Long in Taylor and Vijnovold.
Resource- based Learning. 1987. An Overview from 'Resource- Based Learning Policy'. Saskatchewan Learning Resource Centres.
http://www.saked.gov.sk.ca/curr_inst/iru/resbsdln.htm. Downloaded November 11 1999.
<http://www.saked.gov.sk.ca/curr-inst/iru/resbsdin.html>.
- Reynolds, M. 1997. 'School textbooks and teachers' choices'. Unpublished Phil, M. thesis, University of Cape Town.
- RUEEU (Rhodes University Environmental Education Unit). 1999. Learning for Sustainability Project, Curriculum 2005: 'Environment, as phase organiser, an illustrated report'.
- Robertson, S. 1996. 'A pragmatic look at some of the issues faced by those who seek to produce and deliver resource-based learning in higher education'.
www.Lgu.ac.uk/deliberations/rbl/rpbertson.html.
- Rousseau. 1999. pers. com .
- SAIDE. 1997. 'Research report: an overview of distance education and resource based learning at the University of the Western Cape'.
- SAIDE. 1998. 'Exploring the use of Internet and Satellite Technologies to support the development of educators'. Report to the Multi-choice Pilot Project.
- SAIDE. 1998. 'SHOMA Education Foundation Shoshanguve: Evaluation of a pilot project'.
- Samoff, J. (ed) 1994. *Coping with Crisis: Austerity, Adjustment and Human Resources* Cassell and UNESCO.
- Schaffer, A. and Fredericks, T. 1999. '1999 Evaluation Report: the General Education and Training In-Service Project' (GET INSET) July 22.
- Schon, D. A. 1987. *Educating the Reflective Practitioner*. London, Jossey-Bass.
- Schon, Hopkins, Everett and Hopkins. 1984. Quoted in *Queens University tutorials*. No Date³⁹. 'Benefits of resource- based learning'. *Queens University tutorials*. No Date
<http://stauffer.queensu.ca/infore/tutorials/rbi/rbiben.htm>, Downloaded November 1999.
- Shalem, Y. and Slonimsky, L. 1998. 'Can we close the gap? Criteria and obligation in teacher education'. Paper presented at the Kenton/SASE Conference, Kei River Mouth, October.
- Sikes, P. J. 'Imposed change and the experienced teacher'. In : Guskey, T. R. and Huberman, M. (eds) *Professional Development in Education*. New York, Teachers' College Press.
- Stenhouse, L. 1975. *An introduction to curriculum research and development*. London, Heineman Education.
- Stigler, J. W. ,Gonzales, P. ,Kawanaka, T. ,Knoll, S. and Serrano, A. 1999. 'The TIMSS Videotape Classroom Study'. National Center for Education Statistics. Washington DC.
- Streek, B. 1999. 'Back in Thabo's good books'. *Mail & Guardian*, November 5-11, p. 42.

³⁹ Benefits of resource based learning , Queens University tutorials, no date, **Error! Bookmark not defined.**, downloaded November 199

- Taylor, N. and Vinjevold, P. 1999. *Getting Learning Right : Report of the President's Education Initiative Research Project*. Witwatersrand, The Joint Education Trust.
- Teaching and Learning Centre. 1998. 'Alternative Modes of Teaching – Resource Based Learning, Teaching and Learning Centre for Staff Development'. University of Western Australia. http://www.csd.uwa.edu.au/altmodels/of_delivery/resource-based-learning.html.
- TELI Strategic Planning Executive Summary. 1999. <http://pgw.orgspc/excitivesummary.html>, September.
- The National Library of South African Act. 1998. Number 1395.
- The Schools Register of Needs.
- The Teacher Editor's response. 1998. Letters. February. p. 22.
- Threshold Project. 1990.
- Tiley, J. 1997. *Implementing Curriculum 2005: some suggestions on classroom practice for grade 1, 2 and 3 teachers*. Sandton, Heinemann Publishers.
- TIMSS South Africa. 1998. Howie, S. and Hughes, C. 'Mathematics and science literacy of final-year students in South Africa'. A report on South African students in the TIMSS. Pretoria: HSRC. p30.
- University of Prince Edward Island. 1999. *Handbook of School Librarianship*. http://www.upei.ca/-fac_ed/projects/handbook/rbl.htm. Downloaded November.
- Update on the TELISA Initiative. 1999. <http://www.pgw.org/telisa/update-990826.htm>, September.
- USWE. 1998. Learning about materials and media. Cape Town: Juta.
- Vally, S. 1999. 'Teachers in South Africa'. Between 'Fiscal Austerity' and 'Getting Learning Right' in *Quarterly Review of Education and Training in South Africa*. Volume 6 Number 2. June . Wits EPU.
- Van den Akker, J. J. 1988. 'The Teacher As Learner in Curriculum Implementation'. *Journal of Curriculum Studies* Volume 20, Number 1.
- Venezsky, R. 1992. 'Textbooks in school and society'. In : Jackson, P. W. (ed) *Handbook of research on curriculum*. New York, Macmillan Publishing Company.
- Versfeld, R. and Press, K. 1998. *Choosing materials for the classroom: A guide for teachers*. Johannesburg: Heinemann.
- Wickham, S. & Versfeld, R. 1998a. Investigating and establishing best practices in the teaching of English as a second language in under-resourced and multilingual contexts. Research report prepared for the President's Education Initiative.
- Vinjevold, P. and Associates. 1999. 'First report of the external evaluation of the pilot project for the provision of learning support materials to grade 7 classes'. October.
- Ward, Heneveld and Craig, H. 1996 *Schools Count: World Bank Project Designs and the quality of primary education in sub-Saharan Africa*
- Westphal, V. 2000. The dynamics of an emerging outcomes-based educational approach in a second language English classroom. M.Ed thesis, Rhodes University
- Western Cape Education Department (WCED). 1999. Circular 0084/99. 'Norms and Standards for the funding of Public Primary and Secondary Schools'.

- Western Cape Education Department. 1997. Policy for Educational Technology produced by the Directorate : Media services, Sub-directorate: Educational Technology. June.
- Western Cape Education Department. 1998. *Curriculum Services*. 'Evaluation of WC Grade 1 OBE Pilot'.
- Western Cape Education Department. 1999. *Curriculum Services* . Curriculum Update. Volume 2 Issue 1. September.
- Western Cape. 1999. 'Provincial Administration of Western Cape Circular 0084/99 Norms and Standards for the Funding of Public Primary and Secondary Schools'. August.
- Wickham, S. and Versfeld, R. 1998a. 'Education, equity and transformation'. Paper presented at the 10th World Congress of Comparative Education, University of Cape Town, July 12-17.
- Wickham, S. & Versfeld, R. 1998b . Education, equity and transformation. Paper presented at the 10th World Congress of Comparative Education, University of Cape Town, July 12-17.
- World Bank. 1988. *Education in sub-Saharan Africa: policies for adjustment, revitalisation and expansion*. Washington, The World Bank.