

CURRICULUM STUDIES

Development, interpretation, plan and practice

SECOND EDITION



CELIA BOOYSE & ELIZE DU PLESSIS

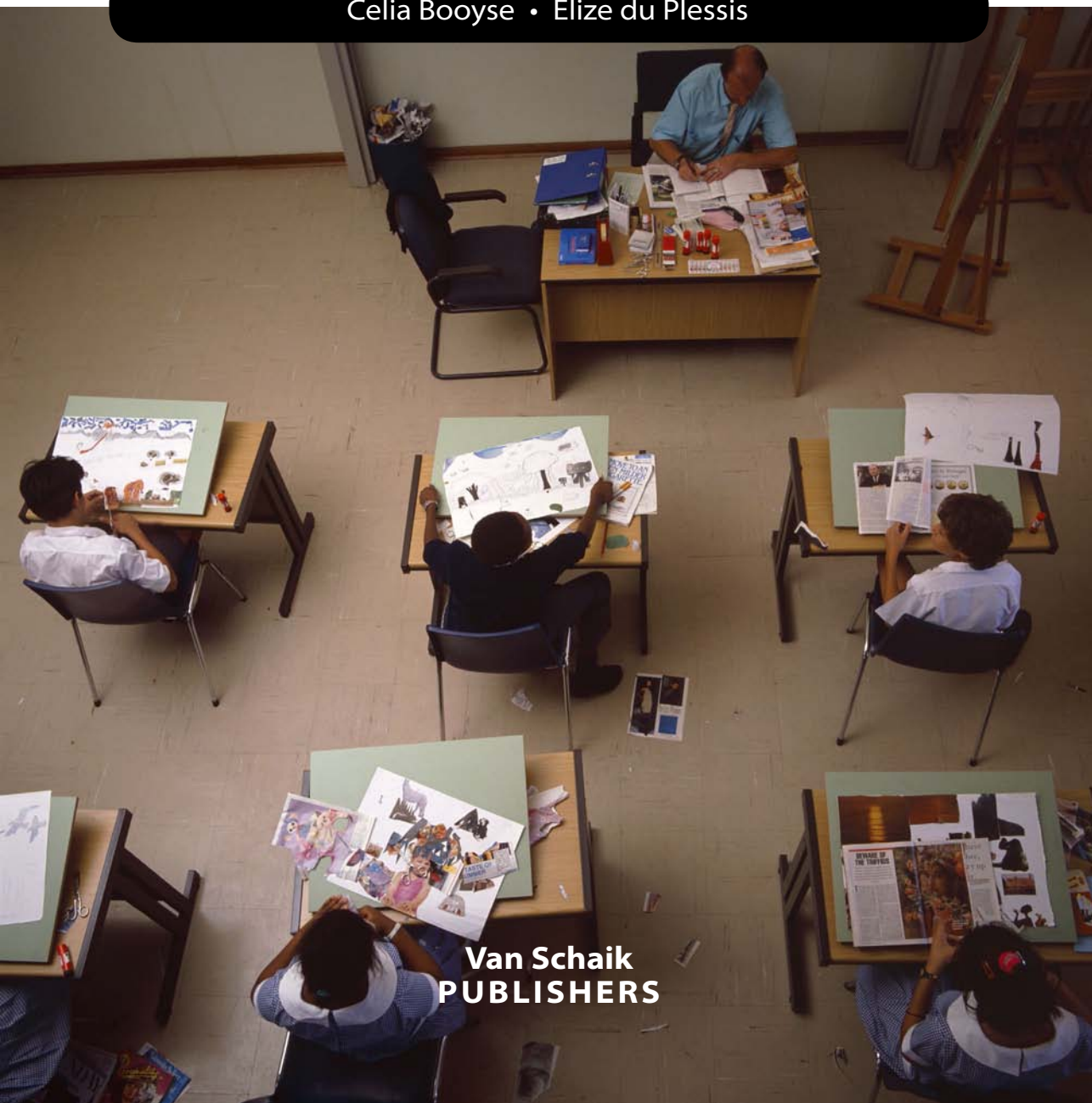
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Celia Booyse • Elize du Plessis



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PREFACE

Teachers are charged with preparing learners for a globally interdependent, complex and interactive world by offering a specific curriculum in a specific context. The educational challenge they face in particular is to foster the development of critical, creative and conceptually receptive minds in learners, while still teaching the required content.

It is not only legislation, prescribed policies and the teacher's knowledge and integration of these that influence curriculum interpretation and implementation. The teacher also needs to understand the influence of different approaches on curriculum development, and be able to analyse existing learning programmes and resource material in order to prepare instructional designs with effective teaching, learning and assessment in mind.

In this book, the views of Tyler, Stenhouse and Freire serve as a theoretical backdrop to a deeper understanding of the teacher's role as interpreter of the curriculum, who ensures an enhanced teaching, learning and assessment practice.

The following aspects of curriculum studies are covered, with the focus on the teacher as interpreter of the curriculum:

- The theoretical framing of curriculum development
- Influences on the teacher's interpretation of the curriculum
- Curriculum design and the influence of policy documents on interpretation and implementation
- Practical guidance in putting curriculum plans into teaching practice

This book offers sound, detailed and practical direction, with a "hands-on" approach, to both new and experienced teachers in the General Education and Training (GET) and Further Education and Training (FET) sectors.

Celia Boooyse and Elize du Plessis

October 2013

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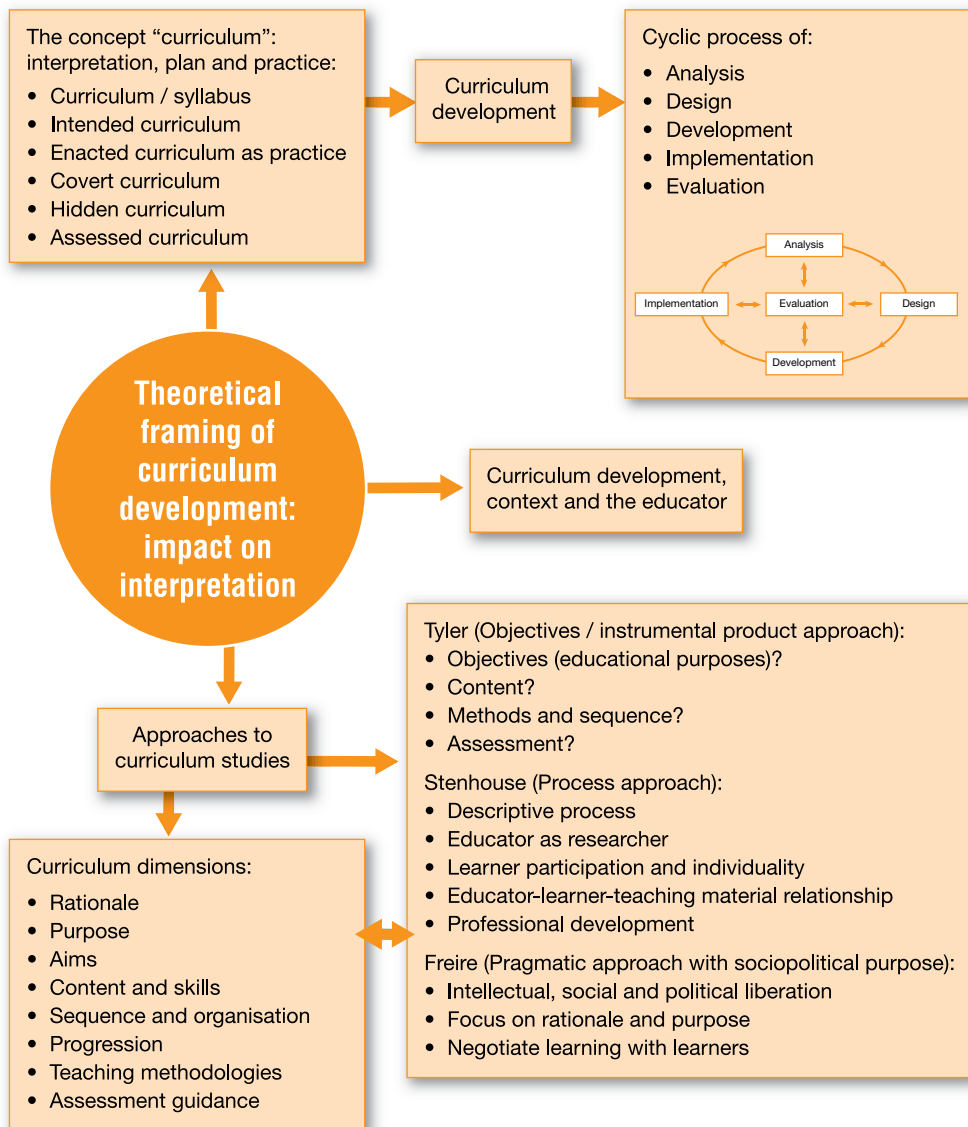
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LIST OF ABBREVIATIONS AND ACRONYMS

C2005	Curriculum 2005
CAPS	Curriculum and Assessment Policy Statement
CASS	Continuous Assessment
CGI	Cognitively Guided Instruction
CHE	Council on Higher Education
COSATU	Congress of South African Trade Unions
CPTD	Continuous Professional Teacher Development
CTA	Common Tasks of Assessment
DSG	Development Support Group
FAL	First Additional Language
FET	Further Education and Training
FP	Foundation Phase
GET	General Education and Training
GETC	General Education and Training Certificate
GFETQSF	General and Further Education and Training Qualifications Sub-framework
HEQC	Higher Education Quality Committee
HEQSF	Higher Education Qualifications Sub-framework
HL	Home Language
IP	Intermediate Phase
IQMS	Integrated Quality Management System
IT	Information Technology
LoLT	Language of Learning and Teaching
LTSM	Learning and Teaching Support Material
MCQ	Multiple-Choice Question
MRTEQ	Minimum Requirements for Teacher Education Qualifications
NAPTOSA	National Professional Teachers' Organisation of South Africa
NCS	National Curriculum Statement
NEEDU	National Education Evaluation and Development Unit
NEPI	National Educational Policy Initiative
NPF	National Policy Framework
NQF	National Qualifications Framework
NSE	Norms and Standards for Educators
NUMSA	National Union of Metalworkers of South Africa
OBE	Outcomes-Based Education
OECD	Organisation for Economic Cooperation and Development
OQSF	Occupational Qualifications Sub-framework

PIRLS	Progress in International Reading Literacy Study
QC	Quality Council
RNCS	Revised National Curriculum Statement
SACE	South African Council for Educators
SAQA	South African Qualifications Authority
SDT	Staff Development Team
SMT	Senior Management Team
SP	Senior Phase
TIMSS	Trends in International Mathematics and Science Study

Theoretical framing of curriculum development



1.1 INTRODUCTION

There are several factors to be taken into consideration when interpreting a curriculum in order for teaching to be effective. The teacher needs to understand the influence of different approaches on curriculum development, be able to interpret existing learning programmes or curricula, look at policies prescribed by the Department of Basic Education (see [Chapter 3](#)) and be able to design with teaching, learning and assessment in mind. This chapter aims to help teachers recognise what influences their understanding, interpretation (see [Chapter 2](#)) and planning.

The views of Tyler, Stenhouse and Freire are used to encourage a deeper understanding of the teacher's role as interpreter and implementer of the curriculum, and how this role can be influenced by social backgrounds and personal views.

1.2 THE CONCEPT OF “CURRICULUM”: DEVELOPMENT, INTERPRETATION, PLAN AND PRACTICE

1.2.1 What is the difference between “curriculum” and “syllabus”?

The concept of “curriculum” has its origins in the Latin *currere*, “to run”, with further reference to the running / chariot tracks for a race. According to Thijs and Van den Akker (2009:1), a curriculum can briefly be defined as a “plan for learning”, as used by the American Hilda Taba in 1962. There are related terms in many languages, including the classical Dutch term *leerplan*, the German *lehrplan* and the Swedish *laroplan*. This term should not be confused with a subject “syllabus”, because this definition of a “*lehrplan*” does not necessarily narrow the perspective, but permits all sorts of elaboration for specific curricular levels, contexts and representations.

In broader terms, the concept of “curriculum” refers to all the learning that is planned and guided as a body of knowledge in order to achieve certain ends (outcomes) in a teaching-learning process as realised in praxis. The curriculum document should include the rationale, aim and purpose of the particular course and refer to related subject methodology, teaching methods and guidance regarding assessment practices, which are all based on a particular approach.

The word “syllabus” in Greek means a concise statement or table of the topics of a discourse or the list of contents of a subject. Such a document has a series of headings with some additional notes which set out the areas to be examined.

A syllabus **will not** generally indicate the relative importance of its topics or the order in which they are to be studied. Those who compile a syllabus tend to follow the traditional textbook approach of giving an order of contents, or a pattern prescribed by a logically sequenced approach to the subject.

1.2.2 What is curriculum development?

Curriculum development focuses on improvement and innovation in education. During this process, which may take many years – especially where generic curriculum development is concerned – and which extends beyond a specific local context, desires and ideals are incorporated in a cyclic process of design, implementation and evaluation to achieve concrete results in practice. The literature contains a variety

of models for curriculum development, in which especially the five core activities shown in Figure 1.1 are distinguished.

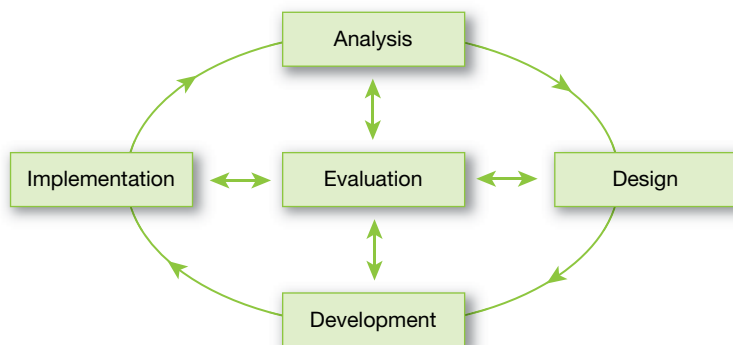


Figure 1.1 Core activities in curriculum development

Source: Adapted from Thijs & Van den Akker, 2009:15. Also see Van den Akker & Kuiper, 2007:739–748.

In a cyclic process, analysis, design, development, implementation and evaluation take place interactively. Curriculum development often starts by analysing the existing setting and formulating intentions for the proposed change or innovation. Important activities in this phase include problem analysis, context analysis, needs analysis and analysis of the knowledge base.

Based on these activities, first design guidelines are drawn up. The design requirements are carefully developed, tested and refined into a relevant and usable product. Evaluation plays an important role in this process, as can be seen from its central position in the model. Evaluation activities cast light on the users' wishes and the possibilities that exist in their practical context, and reveal the best way to attune the product to the practical setting. When the product has sufficient relevance, consistency and practical usability, its impact can be investigated. Whereas the primary emphasis is on generating suggestions for product improvement (formative evaluation), during later phases this emphasis shifts towards evaluating effectiveness (summative evaluation).

1.2.3 Definitions and aspects of “curriculum”

The debate around the interpretation of “curriculum” is long-standing. As far back as 1975, Stenhouse observed that the educationist “is confronted by two different views of the curriculum. On the one hand the curriculum is seen as an intention, plan or prescription, an idea of what one would like to happen in schools. On the other hand it is seen as the existing state of affairs in schools, what does in fact happen” (Stenhouse, 1975).

When we ask what “curriculum” means, we get different answers according to the views, background and experience of the respondent. At a general level, an explanation can be understood in relation to what is included and / or excluded in the description. For example, Eisner (1985) defines a curriculum as a series of planned events that are intended to have educational consequences for one or more learners,

whereas Fraser (1993) has a much wider interpretation of curriculum as the inter-related totality of aims, learning content, evaluation procedures and teaching-learning activities, opportunities and experiences that guide and implement didactic activities in a planned and justified manner.

The older, narrower definition says that when studying a curriculum, we must look at the curriculum plan, i.e. the document that sets out the intention of what, how and why something should be taught. In this definition, a curriculum is a “course of study” or “study programme”, whereas the broader definition is a more inclusive concept that comprises all the opportunities for learning and is viewed in historical perspective in its sociopolitical context. Narrow definitions are likely to foster a conception of curriculum change as a limited and largely technical exercise.

Grundy (1987), Goodson (1984; 1989) and other educationists argue that an awareness of the different interpretations is important in developing our understanding of what a curriculum is. Goodman (1998) in particular says that the struggle over the definition of “curriculum” is a matter of social and political priorities, as well as intellectual discourse; otherwise the study of schooling will leave unquestioned and unanalysed assumptions that should be at the heart of the intellectual understanding and practical operation of schooling.

Another broad definition is that of the National Education Policy Initiative (RSA, 1993): “Curriculum refers to the teaching and learning activities and experiences which are provided by schools.” The definition includes

- the aims and objectives of the education system and the specific goals of the school
- the selection of content to be taught, how it is arranged into subjects and what skills and processes are included
- ways of teaching and learning, and relationships between teachers and learners
- forms of assessment and evaluation used.

This definition covers more than the stated aims and subject-specific documentation, which can be referred to as the **intended curriculum**. The curriculum also involves the consideration of actual classroom practices and experiences – the **enacted curriculum**, which results from the interpretation and implementation of the curriculum. Having the same curriculum on paper does not mean that all schools / learning institutions experience the same curriculum-in-use or enacted curriculum. This is profoundly affected by resources (e.g. laboratories and libraries) and materials that support the learning process (e.g. textbooks). It is also affected by experiences of disruption or continuity, and by the quality and morale of teachers. This means that improving teachers’ knowledge and skills may have an effect on the way they will interpret and implement the intended curriculum.

If the definition of “curriculum” includes activities, opportunities and experiences, we can ask whether the following are part of a curriculum:

- The preference for a subject because of a teacher’s knowledge of the field and choices of teaching strategies

- The principal locking the gates at 08:00 because she wants to force the children to be punctual
- The fact that Mathematics lessons are never scheduled for the last period on a Friday, but Life Orientation lessons often are
- The impact of teachers teaching subjects that they never studied themselves
- Classes that consist mainly of weak learners and repeaters

The above are all examples of the **enacted, experienced or lived curriculum**, which can explain why the same prescribed curriculum can generate very different results in different schools. In other words, the enacted curriculum is the actual process of teaching and learning, the operational aspect of implementing the curriculum, which is based on how the teachers perceive and interpret the curriculum. This enacted, lived curriculum, or curriculum in action, illustrates the importance of both teacher and context and can be intentional or unintentional, or even hidden.

In short, the curriculum can be defined as an organised framework that delineates the content that learners are to learn, the processes through which learners achieve the identified curricular goals, what teachers do to help learners achieve the objectives / goals, and the context in which teaching and learning occur.

The following aspects of the curriculum must therefore be considered:

1. **Official, explicit intended curriculum.** This is the prescribed curriculum, also described as the blueprint for teaching. It is the plan or intentions of, for instance, the Department of Basic Education. A single plan can be used for different learners, although its contexts can differ greatly.
2. **Enacted curriculum as practice.** This is the curriculum as it is experienced. It is also referred to as the **non-official, implicit curriculum** as implemented by a teacher, and is what is actually taught and learnt. Misunderstandings, resource constraints and so on can interfere with the teacher's abilities to implement a curriculum plan exactly as intended.
3. **Covert curriculum.** This is teaching that is implicit (not spelt out), but nonetheless deliberate on the part of the teacher or school. It is especially important in early schooling, when consideration for others, order and obedience, teamwork and cooperation are focal points. "Play" in early schooling is a deliberate curriculum strategy to develop important attitudes and skills such as fine motor skills, spatial differentiation and various prenumeracy skills.
4. **Hidden curriculum.** This is learning that is hidden from the teachers as well as from the learners. It is another form of implicit learning, which the teachers did not intend and are probably not even aware of. We consciously learn many things about the world, or learn to see the world in particular ways, simply by spending a lot of time in the sort of environment that schools and classrooms present to us.
5. **Assessed curriculum.** This is the knowledge and skills that are measured to determine learner achievement or what objectives or learning outcomes have been attained. Assessment is an important element of a curriculum because it establishes how learners will be measured on performance.

1.3 CURRICULUM, CONTEXT AND THE TEACHER

The ideas of Ornstein and Hunkins (1998) about a broader definition of “curriculum” agree with the views of Grundy (1987), Kraak (1998) and Killen (2007), who acknowledge both intended and unintended learning, and who view a curriculum as a social construct. This means that a particular society’s culture will influence the development of a particular sort of curriculum, just as that curriculum will, in its turn, contribute to shaping and forming that society and its culture. Education is a dialogic process, formative and transformative (Freire, 1976). Necessarily, this process involves contact, transmitting and acquiring knowledge and developing skills, habits and values. This mutual influence of education and context is ongoing, so that we should not think of curricula and social structures as entirely separate. Kitchens (2009:255) states that by situating education in the space of local communities, and by connecting the curriculum to the everyday life of learners, situated pedagogy allows these learners to be involved in a conversation that creates new understandings of the world and their place in it. Also, Wei (2009:271), when referring to the enactment of the curriculum, explains that it “should meet the needs of all the learners and be oriented to the learners’ development; embody the nature of science; be focused on scientific inquiry; and even reflect the advance of modern science and technology”.

Figure 1.2 illustrates how aspects like space, time, resources available, community integration, organisational aspects, economic development, political changes and historical background, theories (for instance communication and systems theory), philosophical ideas and developments in technology will influence the approach to and interpretation of a curriculum. It is therefore inevitable that curriculum development is a never-ending process of reflection and change.

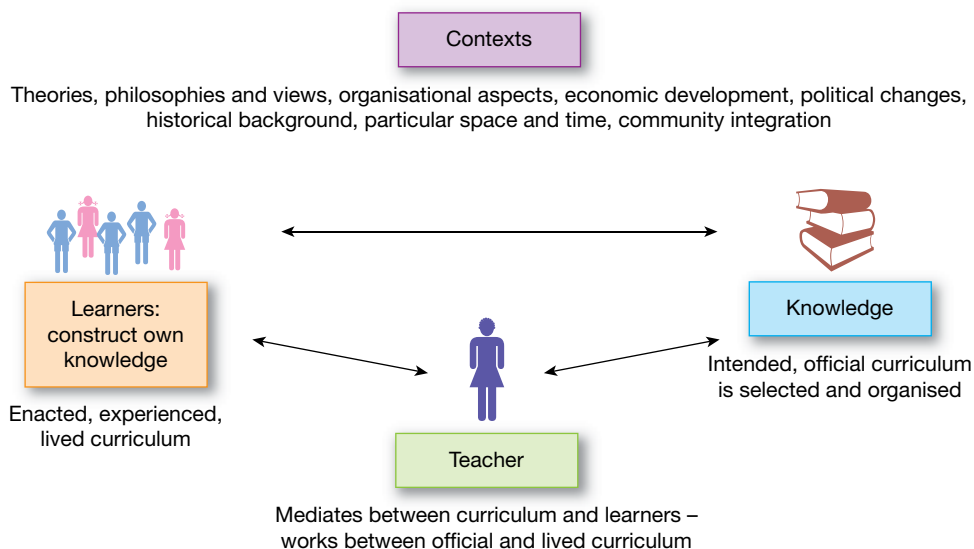


Figure 1.2 A curriculum involves a network of relationships in a context

Source: Adapted from Steinberg (2006)

Ornstein and Hunkins (1998:2) explain how an individual's view of the curriculum reflects that person's view of the world, including what the person perceives as reality, the values he or she deems important, and the amount of knowledge he or she possesses. By understanding a teacher's approach to or view of the curriculum, and the prevailing curriculum approach of the school or school district, it is possible to tell whether the teacher's professional view conflicts with the formal organisational view. A view of the curriculum is about the understanding of how a curriculum is designed and developed; the role of the learner, teacher and curriculum specialist in planning a curriculum; the goals and objectives of the curriculum; and the content, concepts and skills that need to be assessed.

Kelly (1989:4–8) agrees that the view of the curriculum cannot be scientific or philosophical only; this view is too narrow, because the demands of society must also be met. Therefore the understanding of practicalities, innovation and values is also important. By means of contextualisation based on the characteristics of the population, local features and their habits and history, schooling became an easier and more successful process. Paliwal and Subramaniam (2006:25–51) emphasise the diversified mosaic existing in schools and classrooms nowadays. They assume that taking the context and diversity in context into consideration will make difficult content become more understandable and familiar, granting greater meaning in learners' daily lives. Considering the impact of context makes a more promising response to promoting success possible.

1.4 APPROACHES TO CURRICULUM STUDIES

1.4.1 Curriculum dimensions – the questions about rationale, purpose, content and skills inclusion in a curriculum

Whether we are talking about a narrow or broader definition of curriculum, different curricula are based on a particular understanding of **why a curriculum should be developed, what knowledge and applied knowledge (skills) to include in the curriculum and how teaching should take place**, i.e. what should be in a curriculum and how it should be implemented. The approach to the curriculum and its theoretical framing will differ according to the rationale (core intention) of the curriculum.

Whatever the approach of curriculum developers, the purpose, goal and intended result must be clarified by asking the following questions:

1. Why this curriculum?
 - rationale and clear purpose
2. What will be included in the curriculum?
 - knowledge and skills
3. How will the knowledge and skills be organised?
 - logical sequence
 - progression of content and conceptual development
 - teaching / learning methods

4. How will success be measured?

- assessment and its effects
- reality of practice

The more complex society becomes, the greater the pressure on education to do justice to a variety of social interests. Therefore, in order to avoid overloading a curriculum, it is important to prioritise and to make bold choices based on clear arguments. In the literature on curriculum development, three main sources for selection and prioritising aims and content are mentioned:

- Knowledge: academic and cultural heritage for learning and future development
- Social preparation: issues relevant for inclusion from the perspective of societal trends and needs
- Personal development: elements of importance to learning and development from the personal and educational needs and interests of learners themselves

The questions asked when developing a curriculum require a closer look.

1. Why this curriculum?

- rationale and clear purpose

The **rationale** of a curriculum presents the sociopolitical view of the learning to be undertaken: it explains the necessity for the learning proposed. The rationale also explains the view taken of the teaching-learning process and hence of the learner: for example, is the learner an active co-creator and participant in the classroom and beyond, or is he or she trained to be biddable, respectful and unquestioning?

The **purpose** provides an explanation in general terms of what the curriculum intends to help the learner achieve. The purpose statement places the focus more on the discipline and its requirements.

2. What will be included in the curriculum?

- knowledge and skills

The knowledge and skills in the curriculum might be chosen and included for different reasons and will have to be aligned with the rationale and the purpose of the curriculum. For instance, knowledge can be organised into subjects and the different subjects are taught independently of each other and only come together when listed on the final certificate. Selection of key content and concepts for the subject should be guided by the discipline or knowledge area, but also take into consideration the purpose of the curriculum. The content required and the skills expressed in the curriculum determine the teaching strategies and methodologies to be followed. Particular examples and activities linked to the specified content and skills will guide the teacher / educator / facilitator on how to deal with the particular content. The skills linked with the content should be expressed in the outcomes; that is, they can-

not simply be identified by a phrase such as “case studies”. The phraseology must be something like “analyse the case study present in terms of ...” or “present a case study in which you indicate how ...”.

Content and skills specification must therefore

- be clear, specific and appropriate
- acknowledge prior content that forms the stepping stones to new content.

The knowledge is taught in order, in a step-by-step progression, with learners moving up the learning ladder. In this instance, the curriculum aims that learners acquire specific content and skills indicated as important, and aims to ensure that learners acquire this knowledge correctly. In this curriculum, the performance of learners is important.

Knowledge and skills might also be chosen to enable learners to be active, creative and regulate their own learning. In this instance learner competency will be important. In such a curriculum the teacher is viewed as the one to guide learners along their individual paths towards a set of outcomes. Learners need to become competent in using knowledge for life. In this curriculum the subjects have weak boundaries, meaning that the knowledge is organised across subjects, by using themes or by combining different disciplines into an integrated area of knowledge (e.g. social sciences); the curriculum is made relevant to learners by integrating everyday life into the subject knowledge. Different types of knowledge are mixed together and integrated. Knowledge is spread across subjects and is fitted into themes, so it does not follow a particular order or progression.

To interpret and implement a curriculum with competence as a focal point, teachers need to work together and agree on the main idea that will focus the integration, and to assess whether they have a broad range of knowledge and skills that enables them to integrate concepts across the different subjects. As this is not easy to do, it involves additional teacher education; this was a core need in working with, for instance, curricula based on outcomes-based education (OBE) such as Curriculum 2005 (C2005) and the National Curriculum Statement (NCS).

Two questions then come to mind: what kind of knowledge can be included in a curriculum, and what role should abstract knowledge and everyday knowledge play in a curriculum?

Taylor (1999) and others argue that there is a qualitative difference between the ways of thinking in everyday / contextual knowledge and the ways of thinking in abstract / school knowledge. Everyday contexts can be an important bridge to understanding abstract, school learning, but they must be chosen with care because much confusion can arise when everyday contexts are used to illustrate abstract knowledge. Abstract-structured knowledge, also called “school knowledge”, generalises, puts ideas together into concepts and becomes increasingly abstract – it makes statements that claim to be true for many different contexts. [Table 1.1](#) summarises the differences between these two concepts.

Table 1.1 Differences between school knowledge and everyday knowledge

	Everyday knowledge (also known as general knowledge)	Abstract-structured knowledge
How acquired?	Randomly – from conversations overheard, from the TV or radio, from watching parents, from punishment or praise.	In a structured way – schooling extends everyday experience.
How structured?	Unsystematic – it is picked up in bits and pieces.	Systematic – grouped into particular subject disciplines like Mathematics, Science and Geography, which develop their own language.
How communicated?	Orally – it is difficult to remember and repeat.	- Written, which gives it more continuity over time. - Taught systematically, with simpler concepts or tasks coming first and more complex concepts or tasks building on them later.
Based on ...?	Based on opinion – it is personal and local. The type of everyday knowledge that is acquired depends on family and community context and culture.	Based on evidence – it comes from a long tradition of research and debate about what counts as important knowledge. School knowledge depends on a national curriculum that is the same for all children.
Application and results?	Practical and concrete – it belongs to and talks about a particular context.	- Requires generalising and thinking conceptually. - Networked, i.e. it fits into a web of concepts. - Requires learning language (discourse) that is specific to different subjects and ways of thinking.

3. How will the knowledge and skills be organised?

- logical sequence
- progression of content and conceptual development
- teaching / learning methods

To “organise” is to put things together into an orderly, functional, structured whole and to arrange them in a coherent form. The importance of what the learners have to learn, in what particular order, and in what space and time must be established. How the knowledge is organised, and in what sequence, is central to framing learning; for example, the knowledge should be relevant to the labour market, appropriate to apply in civil society and be respectful of learners’ and teachers’ cultural backgrounds.

In curriculum terms, the way in which the knowledge (content) is organised is called an “organising principle”. An organising principle is the basic method of ar-

ranging content so that key ideas can be located. Organising the knowledge (content) selected to be included in the curriculum according to an organising principle helps to simplify a particularly complicated domain and make it easier for the users to grasp.

The overarching approach in a curriculum provides an indication of – and the motivation for – the particular principle or set of principles according to which the curriculum is organised; for example, whether it is organised around outcomes, objectives, unit standards, etc. This organising principle shapes the emphasis in the curriculum: all elements of the curriculum draw their classification and value from the way the curriculum is organised.

It is important to notice that two organising principles relate to curriculum development in general. The first is related to the theory of knowledge espoused in the curriculum as seen in the outcomes, assessment standards, subject and / or teaching methodology, etc., which may, for example, presuppose an approach in which the participatory learner is seen as central to the learning process or one where the learner is simply regarded as the recipient of the required information.

The second organising principle is associated with the discipline or subject itself. It refers to the idea(s) forming the basis of the selection, sequencing, pacing, level and assessment of knowledge in a curriculum. The organising principle of the subject should allow for appropriate sequencing of different skills and content areas – over the course of the year and across grades / years of study. The internal principles of the subject's discipline(s) and theoretical framework(s) direct the logical progression of content and skill development. To ensure coherence in the curriculum, sensitive choices regarding the choice of topics / content / elements and their ordered connectedness to the organising principle should be made. The coherence within the curriculum must mirror the coherence of the discipline.

In addition to choosing the most relevant knowledge (content) and skills to be included in the curriculum, the sequencing of content also needs consideration in order to design a consistent and coherent curriculum.

Suggestions about how much time could reasonably be allocated to the various parts of the curriculum help teachers / examiners to pace the teaching. The relative importance allocated to the content will also impact on pacing.

It is furthermore important to know that the organising principle relates to the theory of knowledge, but also includes reference to a **specific subject methodology**, both of which must be congruent with the selection of content and the cognitive demands required at the particular level.

4. How will success be measured?

- assessment and its effects
- reality of practice

Assessment guidance in the curriculum should have certain characteristics. It should

- be clear, explicit and comprehensive, especially with respect to the kinds of tasks and the evaluation criteria to be used for internal assessment
- identify the number – and nature – of tasks specified for internal assessment

- clearly specify the kinds of tasks and the evaluation criteria to be used for external assessment
- identify the number – and nature – of tasks specified for external assessment.

A guideline document is intended to assist the teacher in preparing the learner for site-based assessment as well as the examination. It should be understood as resource material that indicates how the content in a particular subject should be unpacked for assessment. It also indicates the content knowledge that could be assessed. For instance, a guideline document should provide clarity on how specific outcomes and/or assessment criteria are weighted. The possible teaching and learning support materials relevant to the outcome(s) being assessed should also be highlighted.

The document should not aim to be prescriptive, but rather to provide structured guidance for teaching and assessment. The document helps to create a uniform framework for examinations and formative (continuous / internal / site-based) assessments in order to minimise significantly different approaches to examinations. It needs to be remembered that no assessment or examination can possibly cover all the skills and content that the learners will learn: assessment must, however, cover a representative portion of what learners will have to learn.

Table 1.2 compares approaches to curriculum development and their implications.

Table 1.2 Various approaches to curriculum development and implications for teachers and learners

APPROACH	Approach focus	Spokespersons	Assumptions	Curriculum implications for teachers and learners
BEHAVIOURAL	• Relies on technical and scientific principles. • Paradigms, models and step-by-step strategies are used. • Blueprint or document. • Logical-positivist, conceptual-empiricist, experientialist, rational-scientific, technocratic; thus also technical and scientific.	From Bobbitt, Charters to Tyler, Taba, Gagné	• Knowable components that can be selected and organised.	• Behaviourism has allowed for research that investigates the depths of the mind. • Teachers must perceive learners as cognitive functioning individuals within a social context.
ACADEMIC	• Knowledge, content. • Theoretical, simplistic, unsophisticated. • Traditional, intellectual. • Rooted in philosophical and intellectual works.	John Dewey, Henry Morrison & Boyd Bode, Bruner	• Curriculum development involves resolution, is rational.	• Curriculum development is a systematic process directed by academic rationality and theoretical logic. • It is a fixed approach.



EXPERIENTIAL	• Postmodern view. • Emotional, social, physical and spiritual. • Involves the whole person; the centre is social activities. • Subjective, personal. • Process, humanistic, child-centred. Interpersonal relations.	Dewey, Kilpatrick, Stenhouse, Apple, Pinar	• Curriculum development is a dynamic process fraught with much uncertainty.	• Stress on teachers and their cooperative curriculum decisions. • Self-directed, unstructured and personalised instruction programmes that are “self-paced”.
TECHNOLOGICAL	• Prepares learners for functions in life. • Learning comprises a change in behaviour. • Demonstrable. • Managerial, based on systems. • Scientific, product-oriented, analytical, empirical. • Links with academic model, but with differences.	Tyler, Gagné, Londoner, Hunkins, Kaufman, Pratt	• Major steps can be identified and managed. • Objectivity, logic.	• Needs assessment is the point of commencement. • Management principles will help the application and control of this approach. • Objectives should be formulated in the form of behaviour or performance objectives.
NATURALISTIC	• Creative problem solving, pragmatic, cooperative curriculum. • Teachers make their ideas and values known.	Walker, Allan, Glatthorn, Freire	• Curriculum development is subjective, personal, aesthetic and transactional.	• The same curriculum elements of the academic, experience-based and technological approaches can be used. In addition, there is ongoing give and take within specific interest groups and viewpoints; negotiation and curriculum consensus.
HUMANISTIC	• Non-scientific, creative problem solving. • Outcomes (bottom-up). • Core subjects, like art and music. • Demands of society. • Progressive philosophy and child-centred movement. • Group projects, based on student’s natural development and curiosity. • Freedom to learn.	Eisner, Judd, Francis, Parker, Maslow, Rogers	• Curriculum development is subjective, personal, emphasises self-sufficiency.	• Informal and hidden curriculum is also important, not only the formal and planned curriculum. • Permission for more teacher input in curriculum decisions.
OBE	• Rooted in two educational approaches, namely competence-based and mastery learning. • Combination of experiential, naturalistic and humanistic approaches.	Spady, Kramer	• Curriculum is results-oriented, learner-centred and activity-based education.	• Curriculum 2005 and NCS as vehicles for implementing an OBE approach. • Teachers become reflective practitioners with seven roles to fulfil. • Learners are active and take responsibility for learning. • Assessment is continuous, based on a variety of techniques.

Source: Du Plessis, Conley & Du Plessis (2007:41–42)

Further discussion in this chapter focuses on three approaches to the selection of knowledge, choice of teaching methodology, attitude to learners and strategies for assessment: an objectives (instrumental) approach (Tyler), a process approach (Stenhouse) and a pragmatic, sociopolitical purpose approach (Freire).

1.4.2 The objectives (instrumental) approach – Ralph Tyler (1902–1994)

In Ralph Tyler's approach, the trichotomy of knowledge, social preparation and personal development is clearly articulated. Tyler believed that the needs of the subject discipline, society and the learners should together determine the educational objectives. In his view, a good curriculum strikes the right balance between these three perspectives.

Tyler's views about curriculum development are known by some as the "instrumental approach". The instrumental approach emphasises the importance of a systematic design process. Based on thorough analysis, clear and measurable objectives for the development process are formulated. These objectives provide the reference points for the design process (planning by objectives).

Tyler assumed learning to be the ultimate purpose of schooling and therefore a curriculum should be designed in such a manner that effective learning can take place. He held the linear technical production perspective that educational decisions should be made objectively, primarily by experts with specialised knowledge. He based educational decision making on determining the ends before deciding on the means. Tyler's curriculum involved planning, implementation and evaluation aspects (see [Figure 1.3](#)).

Tyler (Posner in Beyer & Apple, 1998) suggests that the following be considered in curriculum planning:

- **Decide what educational purposes the school should seek to attain.** Purposes or "objectives" should be derived from systematic studies of the learners and contemporary life in society, and from expert advice and analyses by subject specialists.
- **Determine what educational experiences can be provided that are most likely to attain the indicated purposes.** Experiences should be consistent with the set objectives. Educational experiences are justified by the objectives that they serve.
- **Find ways to organise the educational experiences effectively.** Experiences should build on one another and enable learners to understand the relationships among their learning activities. To create such a cumulative effect, attention should be given to the sequence of experiences within a subject field, for instance Mathematics, and to integration of knowledge across fields. There are certain concepts, skills and values that are sufficiently complex to require repeated study in increasing degrees of sophistication. The application of these concepts can be broad and pervasive enough to enable students to relate one field with another.

- **Determine whether the educational purposes are being attained.** Behavioural evidence should be the criterion for assessing whether the objectives of the curriculum have been attained. Objective evaluation instruments like tests, questionnaires and work samples can be used. Evaluation (assessment) is necessary to find out whether learning experiences actually produce the intended results (Tyler, 1982:164–174).

Tyler's ideas on teaching are that the teacher must specify the educational purpose by listing the behavioural objectives; select content and teaching activities that fit the objectives; let teachers implement this prescription; and end with assessing whether the learners have met the objectives. Figure 1.3 shows that this means-end reasoning process should be a logical thinking and planning process where the evaluation serves not only as the primary justification for the objectives (means), but also as the starting point in planning. This means that there is a clearly definable cause that results in an effect. Tyler would always ask: "How can one decide on educational means by referring to the educational ends?"

The strength of Tyler's approach lies in its simplicity: the complex design process is reduced to just a handful of questions. The Tyler rationale also emphasises the importance of a rational and goal-directed approach. By systematically answering the four main questions based on factual arguments, the validity and internal consistency of a curricular product can be enhanced. However, critics also point to a few disadvantages of this objectives (instrumental) approach. The strong emphasis on the attainment of predetermined objectives leaves little flexibility to adjust to the often-changing needs of users and growing insights of designers. Also, the technical approach focuses on factual, empirical data, while education is also concerned with personal views and opinions; in addition, sociopolitical aspects play a prominent part in many curricular issues.

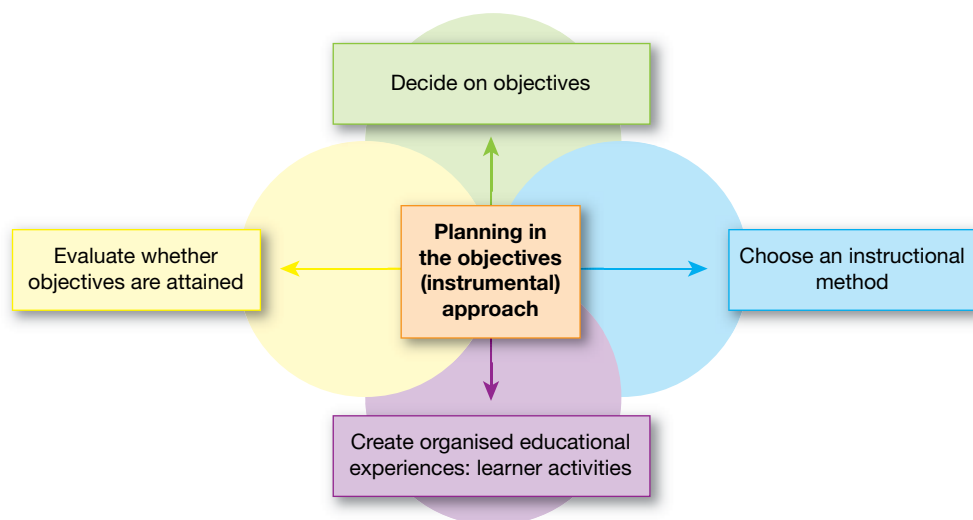


Figure 1.3 The means-end rationality in Tylerian planning

According to Tyler, decisions on the instructional method and content should be reserved for people with technical expertise. He argued that only technical experts would not allow their own values to cloud the objectivity of their work. Even the decisions about the purpose of the learning should be based on specialised knowledge developed from studies of learners and their societies regarding what they should learn, or on subject-matter expertise.

Table 1.3 Summary of Tyler’s ideas

Ralph Tyler (1949)	
Principles for selecting contents	Must contribute to the achievement of the objective; effectiveness and efficiency of teaching
Principles for making decisions about sequencing the contents	Sort the objectives in linear order; should be logically ordered
Who makes the decisions about curriculum?	Informed people or schools plan how to deliver the learning experiences. Technical expertise is important. Four questions: 1. What are the educational purposes? 2. What are the educational experiences? 3. How are the educational experiences organised? 4. How can it be determined whether the educational purposes are attained?
Principles to guide teaching of the curriculum	Follow four steps: • Aims and objectives • Content to be taught • Organisation and teaching method • Assessment and evaluation Directions to examination are provided. The focus is on teaching strategies to achieve objectives that are meaningful to the learner / logical systematic framework.
Focus of assessment	Objective evaluation instruments; formal assessment of whether objectives are achieved; skills and information; grading and marking and testing
Most valuable aspect of the approach	Teachers guide learners to achieve objectives; structures and promotes learning

1.4.3 The process approach – Lawrence Stenhouse (1926–1982)

Stenhouse was a British educational thinker who sought to promote an active role for teachers in educational research and curriculum development. He believed that curriculum development was quite a “messy process”, as teachers ought to research while they teach, evaluate as they research, and may change course in the process of teaching. Stenhouse therefore argued that curriculum proposals should be descriptive rather than prescriptive, and should be subject to ongoing change. Curriculum

proposals should also be related to what happens as courses develop and should call for adaptations in the light of what happens in practice (Stenhouse, 1975).

Though Stenhouse viewed the classic objectives approach to curriculum research and planning as a useful one within limits, he expressed reservations about advocating it as a universally valid and obligatory model for curriculum designers. He gave the following as limitations: firstly, the objectives approach has a tendency to reduce content to an instrumental role. This appears to have serious shortcomings in certain subject areas, such as the arts, and it fails to take advantage of the support offered by structured content – the disciplines. Secondly, Stenhouse was of the opinion that the objectives model drastically and significantly oversimplifies the educational situation. He believed that many of the problems of education stemmed not so much from its content as from the terms and conditions under which learners were required to access it. Consequently he pioneered an approach to curriculum development and reform that stressed **the quality of the educational process** and the values that defined it. He argued that a plan changes in the process of implementation, and that teachers are professionals whose decision to change a plan in response to the needs of their learners should be respected. Stenhouse referred to the complexity of the multivariate situation in which curriculum research and planning must operate.

A curriculum should provide areas of knowledge and guidelines for teaching, but should be written like a suggestion and not like a prescription. Teachers should research as they teach, evaluate that research and change course in the process of teaching if necessary. Curriculum proposals should be **descriptive** rather than prescriptive and subject to ongoing change. They should be adapted in response to what happens in practice as courses develop (Stenhouse, 1975:84–97).

As indicated above, Stenhouse viewed curriculum as a process that cannot be predetermined and that changes with the context and people involved. His ideas are learner-centred and based on progressive education that creates opportunities for children to develop a process of questioning, to find information themselves, and to apply their own answers to new situations. He valued having learners participate in classroom activities, express their own views and reflect on their own experiences (Stenhouse, 1975:85–97).

Stenhouse also valued the development of individuality through a creative and critical engagement with culture. He was an early advocate of inclusive education and was committed to making available to all learners an education that was challenging and empowering. His idea of “the teacher as researcher” lay at the heart of the process approach to curriculum as the means by which a worthwhile educational process could be progressively realised by teachers in concrete forms of action within their classrooms and schools.

Table 1.4 summarises Stenhouse’s approach.

Elliot and Norris (2012) summarise Stenhouse’s unique contribution to the field of curriculum as his distinctive conceptualisation of the relationship between the teacher, the learner and the subject matter. They concur with other researchers that Stenhouse acquired an acute appreciation of the ways in which teaching enhances or inhibits, develops or displaces the potential for autonomous thinking of learners. In their view, Stenhouse changed the relationship between curriculum theory, edu-

cational research and teachers; placing teachers right at the heart of the curriculum development process and the teacher as researcher at the heart of developing teaching professionalism.

Table 1.4 Summary of Stenhouse’s ideas

Lawrence Stenhouse (1975)	
Principles for selecting contents	Intrinsic value is not only a means to an end; focus on principles of procedure. Selecting content is a process. The choice of content should enable teachers and learners to gain expected knowledge.
Principles for making decisions about sequencing the contents	Proposals should be recommendations, not prescriptions. Focus on how learners learn and attempt to enrich learning.
Who makes the decisions about curriculum?	All should be involved in teaching-learning process; teachers do research while they develop and teach.
Principles to guide teaching of the curriculum	Rough guidelines to try out; activities to involve the learners; give learners a chance to apply, share in planning, have active roles, examine and evaluate.
Focus of assessment	Focus on knowledge, understanding and judgement. The teacher ought to be a critic, not a marker; assessment should be about improving learners’ capacity to work; teaching of self-assessment is viewed as important.
Most valuable aspect of the approach	The learner must have a sense of grasping the subject’s deep structures. The value of teacher development to refine their criteria for judgement (professional development) is acknowledged.

1.4.4 Paolo Freire’s pragmatic approach intertwined with a sociopolitical purpose

The future isn’t something hidden in a corner. The future is something we build in the present. – Paolo Freire

Working with out-of-school learners, Paolo Freire (1921–1997) added a political/power-relationship perspective to the study of curriculum by arguing that one must recognise that a curriculum is never value-neutral, and so look carefully at the hidden aspect of curriculum, since learning has the power to oppress or liberate the learners (Gerhardt, 1993:453). Freire wanted to move away from context-free objectives, competitive and external evaluation, dualistic models that separate teacher and learner, meaning and context learning and environment and models of linear progress through value-neutral information transmission.

Freire’s focus on people’s understanding of and interaction with the world has been of great significance to those teachers who have traditionally worked with “those who do not have a voice” and who are oppressed. The idea of building a pedagogy of the oppressed or, more positively, a pedagogy of hope, and how this work may be

carried forward, has been the aspect of his work with the most significant impact. An important element of Freire's thinking was his concern with conscientisation – or the developing of consciousness that is understood to have the power to transform reality (Taylor, 1993:52). What we teach and the way in which we teach either deepens learners' feelings of powerlessness or assists them to address the reasons for their lack of power. According to Freire, a curriculum either empowers or it domesticates; it is always political. So as teachers, we cannot ignore the political questions.

Paolo Freire promulgated educational ideas and methods to ensure **liberation through education**. Freire's criteria for developing, for instance, a language curriculum are that it should be context-sensitive, ought to have phonetic value and whenever possible should begin with simple, applicable and appropriate words that serve a purpose in the process of understanding.

Freire emphasised dialogue (communication) as important for all concerned in education. For him, dialogue was not just about deepening understanding, but was part of making a difference in the world. Dialogue in itself is a cooperative activity and can be seen as enhancing the community and building social capital (<http://www.infed.org/thinkers/et-freir.htm>).

Freire's thinking focused attention on what the rationale, the purpose and the aims of a curriculum should include (see Table 1.5).

As mentioned earlier, in general the purpose(s) of a curriculum may be single or manifold, and could include preparation for further or higher learning and/or preparation for participation in civil society and/or for employability. Freire's thinking was that the purpose of curriculum should be to liberate learners, to free their potential, and to provide opportunities to find and express their own agency (<http://www.infed.org/thinkers/et-freir.htm>). Freire's emphasis brought new awareness of what the curriculum is intended to help the learner achieve. These achievements are frequently expressed as objectives, outcomes or abilities that a learner can demonstrate.

Besides the focus on the rationale of a curriculum, Freire valued the inclusion of well-defined aims in the curriculum. These aims need to serve as further direction to what is intended to be achieved through the implementation of the curriculum.

In general, well-defined aims clarify clear the relationship of the current curriculum to other levels of the education system and should therefore be

- suited to the likely context(s) of the target group in which the subject will be taught and learned;
- clear and specific;
- understandable and useful to those using curriculum documents;
- aligned with the purpose and the subject methodology, which in turn should be suited to the interests and capacities of learners at this level; and
- based on and linked to a particular theoretical framework.

It is important to keep in mind that the intended aims, purpose and outcomes, culture and context influence the structure of the curriculum as a whole.

Freire's thinking is summarised in Table 1.5.

Table 1.5 Summary of Freire’s ideas

Paolo Freire (1970)	
Principles for selecting contents	Guided by values and questions of power. The selection of content comes from the life experiences of learners, i.e. the content is based on the needs and interests of the learners.
Principles for making decisions about sequencing the contents	Experimental – key themes from learners’ lives
Who makes the decisions about curriculum?	Must be dialogic – curriculum development to take place as a discussion with learners Steps: 1. Teachers help people to develop generative themes that represent their view of reality. 2. Professional teachers and volunteers are involved in refining curriculum content and expectations.
Principles to guide teaching of the curriculum	Interactive and critical reflection; setting up an extended dialogue with learners Problem-posing methods that require dialogue in which teacher and learner are “critical co-investigators” Teachers to develop a “critical consciousness”
Focus of assessment	Focus on the reflections of the participants; whether empowerment or change in consumption took place
Most valuable aspect of the approach	To be able to read the world, not only the word; political empowerment; “emancipatory” approach with critical reflection valued

In summary, the following aspects of Paolo Freire’s work have a particular significance for our discussion.

- Freire emphasised dialogue as a working relationship between teacher and learner, a cooperative activity that involves mutual respect. For Freire, dialogue presupposes trust, mutual respect and commitment, and that through the process of dialogue thoughts will change and new knowledge will be created. He viewed dialogue as a way of knowing and part of making a difference in the world (Freire & Macedo, 1995:379).
- Freire’s insistence on situating educational activity in the lived experience of participants has opened up a series of possibilities for the way informal teachers can approach practice. His concern with looking for words that can generate new ways of naming and acting in the world when working with people around literacies is a good example of this.

1.4.5 Tyler, Stenhouse, Freire and the interpretation and implementation of a curriculum

South Africa embarked on a radical transformation of education and training between 1989 and 1994, and subsequently on reviews of the curriculum. One of the

most challenging aspects of the initial transformation has been the adoption of an OBE approach that underpins the introduction of C2005. C2005 has tried to capture aspects of all three of the approaches discussed above, but just as there was tension between the three different approaches of Tyler, Stenhouse and Freire, so there was tension between different aspects of policy (see [Chapter 3](#)). Tyler used the narrow definition of “curriculum”, while Stenhouse argued for a broader definition and Freire just assumed a broader definition. But that was only their starting point. The main focus of their debate was on what should go **into** a curriculum and how it should be approached (see Table 1.6). For this reason, these different approaches become useful tools for sharpening our understanding and interpretation of C2005, both its revisions and the amended NCS, referred to as the Curriculum and Assessment Policy Statement (CAPS). The CAPS is discussed in more detail in [chapters 3 and 4](#).

Table 1.6 Approaches to curriculum planning according to Tyler, Stenhouse and Freire: a summary

Ralph Tyler	Lawrence Stenhouse	Paolo Freire
- Sees curriculum as a product (objectives / instrumental approach) - Has a linear focus on the end product; cannot branch off in the middle	- Sees curriculum as a process with objectives not set at the start, but changing in the teaching process - Focuses on descriptiveness - Knowledge must be speculative.	Thinks about the purpose of a curriculum – it must serve to liberate learners to make links and understand language, experiences and their daily struggle.
Objectives, content, methods and sequence questions	- Guidelines and professional development are important. - Learners should know what to do with content. - Understanding and criteria are central to the process.	Intellectual, social and political liberation – how learners feel about knowledge and whether experiences can be used in everyday life
Educational purposes, experiences etc. are important.	Carries out research while teaching, evaluates while researching, changes the process of reaching goals.	- The way in which we teach may change learners – it is always political (empowers or domesticates the learners). - Negotiates understanding with learners.
Do research to find the best content to include in curriculum / evaluate content.	- Tests, adapts and evaluates the process to see if it is enlightening. - Learners should “change” in the learning process.	Learners should be able to reflect on the value of learning.

The following universal principles in approaches to curriculum, but also to teaching and learning, are to be found in the views of Tyler, Stenhouse and Freire, as shown in Table 1.6:

- Experiential learning
- Clarity of focus
- Expanding opportunities
- Defining outcomes, aims or objectives
- Importance of knowledge, skills and values
- Evidence of achievement
- Individual learning
- What and whether we learn is more important than when we learned it

Tyler wanted structure in the teaching and learning situation and argued that there should be **clarity of focus** in what you want to teach, how you want to teach and how you want to assess. Therefore, the first step in effective teaching is to **define objectives** (outcomes), keeping in mind that these objectives should be context-bound. The teacher should ask four basic questions:

1. What educational purposes should the school seek to achieve? (By “purpose” Tyler was referring to behavioural objectives (developed by gathering information from three sources: the subject matter, the learners and the society).)
2. What educational experiences can be provided that are likely to achieve these purposes?
3. How can these educational experiences be effectively organised?
4. How can we determine whether these purposes are being achieved?

Tyler argued that **individual learning** would ensure that each learner achieved the set objectives (outcomes). We can interpret this to mean that educational experiences should be derived from objectives, based on the results of an analysis of the situation (learner, subject, society), and that objectives should be filtered through a philosophical / psychological screen before being finalised. It is important to develop citizens who are able to solve problems and can engage in democratic processes.

The principles mentioned above have their roots in the competency-based education movement and mastery learning. They are based upon the premise that we can help learners to create definite and reliable evidence of achievement. This model focuses on the need to create favourable learning conditions as regards time, teaching strategies and learning success.

A more detailed look at competency-based learning reveals that Stenhouse’s ideas of a teaching-learning process prepare learners for success in fulfilling various life roles. It is important to test, adapt and evaluate the process to see whether it is an enlightening one, and in that manner **expand opportunities** for application. Stenhouse stressed the importance of doing research while teaching and of following the route of “design down, deliver up” – a developmental process where the teacher can change the teaching-learning environment according to context and learners’ needs. The learner should change in the teaching-learning process to internalise information and form opinions of his or her own.

Mastery learning promotes the idea that all learners can achieve the desired teaching outcomes if given favourable learning conditions such as flexibility, sufficient time and alternative ways of learning. Freire focused on these aspects; he wanted teachers and curriculum developers to make sure that educational experiences could be used in real life. **Experiential learning** was of utmost importance: learners should be able to reflect on the value of learning. What is also considered here is the perception of what the ideal learner in a particular field **should look like, be like, act like** and **think like**. Freire felt it was important to identify specific knowledge in order to attain a skill which could be applied in practice as the connection between reflection and action.

1.4.6 The impact of these approaches in terms of curriculum interpretation

If we translate the approaches described above into teaching and learning principles, methodology, the use of learning materials and assessment, then teaching implies providing the learner with learning experiences and guiding, supporting and mediating the learning content by facilitating understanding.

Learning implies the development of not only the learner's knowledge, but also his or her understanding of concepts, skills, activities and values. All these should then be based on interaction between teacher, learner, context and content. Learning is relevant to the real-life situations and experiences of the learner; therefore cross-curricular integration of knowledge and skills might prepare learners for reality and the world of work.

Some examples of methodology and teaching strategies are discussed in more detail in [Chapter 2](#), but in short they imply that teaching involves critical thinking and reasoning, reflection and action. Learners must take responsibility for their learning by being actively involved in the teaching-learning process. This also means that the teacher should use a variety of approaches and learning material in the learning process to accommodate different learning styles.

Assessment is viewed as an integral part of teaching and learning, is continuous and is based on a wide variety of techniques apart from testing. Feedback in assessment is valued as part of learning. Assessment is discussed in more detail in [Chapter 4](#).

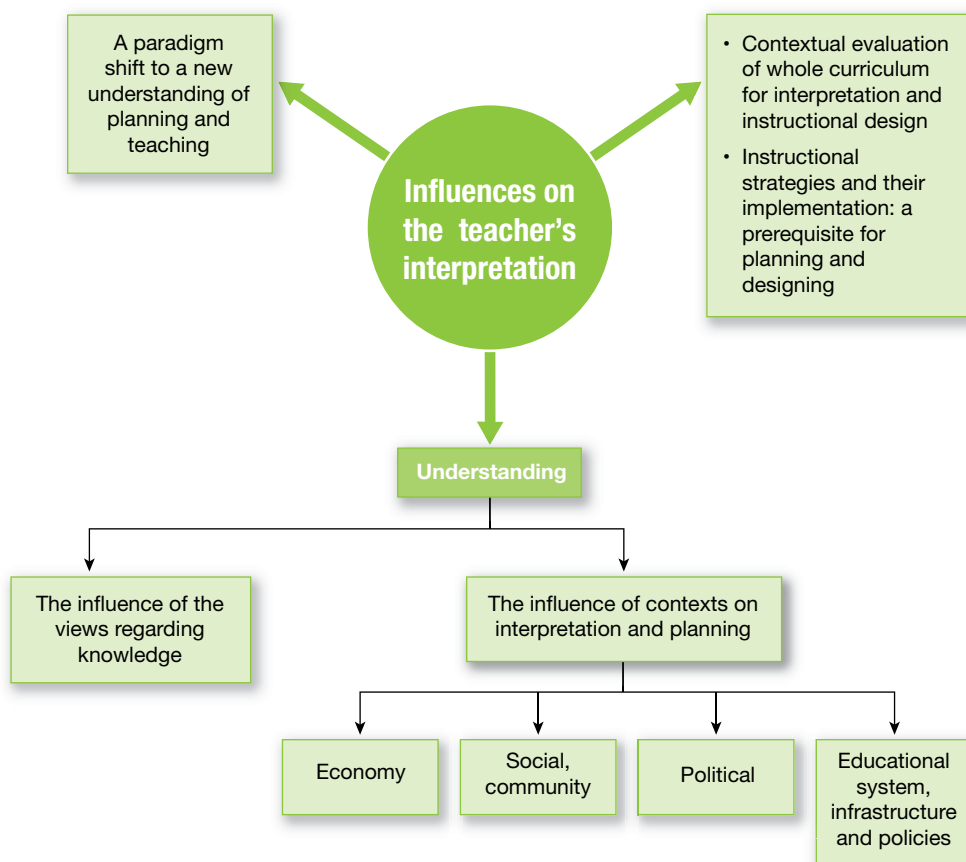
1.5 CONCLUSION

An understanding of the theoretical background of a curriculum is essential for its interpretation and subsequent implementation, which includes planning for teaching and structured ways to enable learning to take place. The views of Tyler, Stenhouse and Freire elucidate the interpretation and implementation of the curriculum. Although the focus in this chapter was on the instrumental (objectives) approach, the process approach and a pragmatic (purpose) approach, a holistic perspective is essential to encourage the emergence of compassion, optimal learning environments, just relationships and ecological sustainability, which are echoed in the post-

modern philosophy of curriculum development. The chapters to follow provide the background to the importance of context: context of meaning and the understanding of rootedness in a particularity of place and context. This means that understanding context, policies, the place of knowledge and applied knowledge influences how the curriculum is interpreted and implemented.

Influences on the teacher's interpretation of curriculum

CHAPTER 2



2.1 INTRODUCTION

The way we interpret the world around us is determined partly by our beliefs, values and norms, but mostly by contextual influences. The teacher's interpretation and implementation of a curriculum is also influenced by the context and his or her understanding of how learners learn. Choices regarding planning, the inclusion of particular instructional strategies and practical application are embedded in knowledge and the understanding of the educational situation. Influences that affect teaching and learning range from the political, social and economic culture to the norms and knowledge structures of teachers. This chapter aims to help teachers understand these contextual influences, because this is a prerequisite to being able to effectively design teaching that enables learning to take place.

2.2 CONTEXTUAL EVALUATION OF THE WHOLE CURRICULUM FOR INTERPRETATION AND INSTRUCTIONAL DESIGN

2.2.1 The impact of context on curriculum

Lev Vygotsky, an educationist who argued for a constructionist perspective in education, lived during the Russian Revolution, a time of great change in his culture and society. He believed that the lifelong process of development is dependent on **social interaction**, and that **social learning** actually leads to cognitive development (Vygotsky, 1978). Traditionally, schools have not promoted environments in which learners play an active role in their own education as well as that of their peers. Vygotsky's theory, however, requires teachers and learners to play non-traditional roles as they collaborate with each other, because both are influenced by the contexts in which they live, teach and learn. Instead of teachers dictating meaning to learners for future recitation, they should collaborate with learners in order to create meaning in ways that learners can make their own (Hausfather, 1996). Learning becomes a reciprocal experience for both learners and teachers. This means that a teacher cannot ignore context in the process of developing learning programmes (see Figure 2.1).

According to Vygotsky's theory, the physical classroom should provide clustered desks or tables and work space for peer instruction, collaboration and small-group instruction. Like the environment, the instructional design of material to be learned should be structured to promote and encourage student interaction and collaboration. Thus the classroom becomes a community of learning.

Because Vygotsky asserts that cognitive change occurs within the zone of proximal development, instruction should be designed to reach a developmental level that is just above the student's current developmental level. Vygotsky (1978) postulates that "learning which is oriented toward developmental levels that have already been reached is ineffective from the view point of the child's overall development. It does not aim for a new stage of the developmental process but rather lags behind this process".

Appropriation is necessary for cognitive development within the zone of proximal development. Individuals participating in peer collaboration or guided teacher

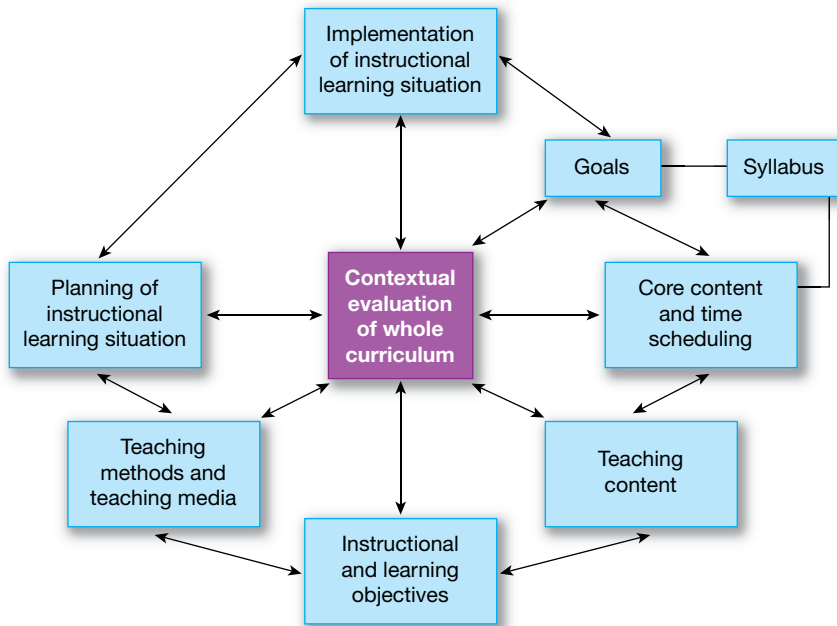


Figure 2.1 Contextual evaluation of the whole curriculum

instruction must share the same focus in order to access the zone of proximal development. “Joint attention and shared problem solving is needed to create a process of cognitive, social, and emotional interchange” (Hausfather, 1996). Furthermore, it is essential that the “partners” in this educational environment be on different developmental levels and that the higher-level partner be aware of the lower one’s level. If this does not occur, or if one partner dominates, the interaction is less successful (Driscoll, 1994; Hausfather, 1996). This requires the teacher to have a good understanding of contextual influences on planning, instructional design and assessment in the teaching-learning environment.

2.2.2 The influence of changes in the South African context on curriculum

The context in which we live has undergone significant economic, political and social changes in recent years (see Figure 2.2). These changes are not necessarily of South Africa’s making, but are economic imperatives driven by global factors. They are nevertheless having an effect on the new educational policies in our country. The type of learner we produced in the past no longer meets the requirements of our rapidly changing world, so we have to explore a variety of forms of assessment to “fit the purpose” today.

In the South African situation, we can accept that the following social structures have had a powerful impact on the South African curriculum:

- The changing economic relations in the transition from an agrarian to an industrial economy

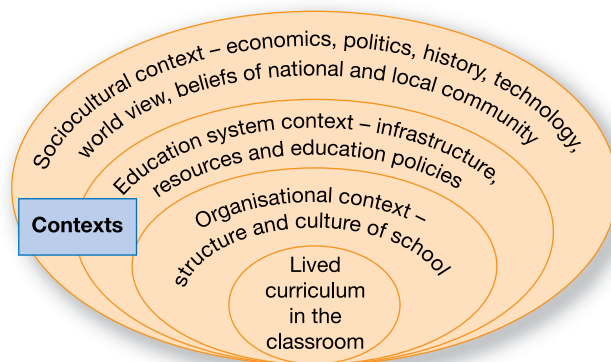


Figure 2.2 Contextual influences on education

Source: Steinberg (2006)

- The shifting power relations both within and between power groups related to the economic changes
- The shifts in ruling-group ideology necessitated by and contributing to the changes

Why was it necessary to change the approach to teaching and learning and the curriculum framework? In all countries, national curriculum frameworks shape and give direction to teaching and learning. They set out a country's education goals.

2.2.2.1 The key economic forces that drive the South African education system

One of the forces that drives our new education system is globalisation. Since South Africa's democratic elections in 1994, we have re-entered the world economy, which means that the economy of the country has to grow at a rate that is comparable to the growth rates of countries in the rest of the world. But has this happened? There are also global expectancies in terms of skills and ways of thinking, capacity to drive the economy and performance of education systems and performance in international tests such as the Trends in International Mathematics and Science Study (TIMSS) and the Progress in International Reading Literacy Study (PIRLS).

South Africa is currently rated 93rd out of 178 countries on the United Nations Human Development Index. This suggests that our country is not producing people capable of competing with their counterparts in other parts of the world in terms of producing high-quality goods cost-effectively. Does this have something to do with how we plan, teach and assess? Does the education system focus on providing the learner with the right skills and attitudes to enter the job market?

The economist, Nobel Prize winner and professor of economics at the University of Chicago, James J. Heckman, argues strongly that the economic strength of any nation depends on the skills of its people. According to Heckman (2000; 2007), the emphasis in education should be on human capital development and the enhancement of life skills, with a special emphasis on the economics of early childhood. The context in which the development of human capital takes place should be con-

sidered, and should be coupled with the enhancement of non-cognitive skills such as self-discipline and persistence that affect educational attainment. Others such as Ndhlovu, Bertram, Mthiyane & Avery (1999:54) confirm that we need to develop “economic capital; money and physical resources as well as ‘human’ capital; people with knowledge, skills and attitudes”. They further stress that we need to develop and assess entrepreneurial abilities to enable people to start their own businesses, and in this way provide employment for themselves and others (Ndhlovu et al., 1999:54).

In an effort to develop human capital in South Africa, trade unions such as the National Union of Metalworkers of South Africa (Numsa) and the Congress of South African Trade Unions (Cosatu), educational initiatives of the time such as the National Education Policy Initiative, organised business initiatives such as the Private Sector Education Council, the National Training Board, the ANC and others began to debate and explore the unification of education and training in South Africa. There was growing consensus about the need to transform education and training and to address the difficult issues facing development. All the parties agreed that the following needs had to be addressed:

- Change perceptions that mental work has more value than manual work
- Change perceptions that academic education has a higher value than technical-vocational education
- Close the gap between what schools deliver and what success in the workplace requires
- Achieve equity in providing quality education, learning resources and access to education
- Improve national productivity in order to be internationally competitive

Cosatu has been exploring international trends in training since the 1980s. Its discussions helped the ANC to formulate a proposal for a National Qualifications Framework (NQF). This was to be a single national framework that would bring together all education and training under one authority. In June 1995, a draft NQF bill was published and in October 1995 an Act was passed to establish the South African Qualifications Authority (SAQA) to govern, manage and recognise all educational and training qualifications in South Africa. In 1996, the SAQA Board was appointed and the NQF, one of the first formal structures of its kind in the world, became a reality.

2.2.2.2 Influences from South Africa's social context

The South African education system encourages learners to develop tolerance and understanding for people who are different from themselves. The social aim is to break free from any prejudice and stereotyping, and to reflect a global move towards a world in which the spiritual aspects of our existence are valued rather than simply our rational thinking abilities. This might explain why many South African policies emphasise holism and educating the whole person.

2.2.2.3 Influences from South Africa's political context

As history shows, those in power tend to give education a “flavour and form” that reflects their interests.

Over the past 19 years, political changes in South Africa have been focused on removing the legacies of the past apartheid regime, in particular segregation and inequality.

Democracy has also found its way into school structures, and governance is now in the hands of the school community: the parents, teachers and learners. This signals a move away from the highly centralised, tightly controlled bureaucratic system of the past to a more open, flexible, democratic and participatory system. Schools are central to building a new culture of tolerance in South Africa. One way in which this can be achieved is by building more democratic and participatory structures. Another way might be through teaching learners the skills and attitudes that will enable them to participate critically, promote tolerance of differences, eliminate prejudices and promote respect.

We have seen that our past teaching practices were aimed at learning intended to achieve a particular result and be promoted, while outcomes-based education based attainment on whether outcomes are achieved. In future, traditional modes might be combined with objective-driven or content-based education. All of these will be determined by the acceptance of particular approaches in the educational environment and the roles that teachers and learners should play in the teaching-learning environment.

2.2.2.4 The influence of the educational system, infrastructure and policies on interpretation and implementation of the curriculum

Since 1994, South Africa has undergone a great deal of educational change. Before 1994, the education system was fractured (there were 19 different educational departments) and unequal, and was separated according to racial, geographic and ideological lines. The emphasis was on what the teacher would do rather than on what the learner would be able to do at the end of the learning experience. Working in an outcomes-based teaching / learning environment changed the role of the teacher: he or she became a facilitator and the learner had to take more responsibility for active learning. Future changes might again emphasise the role and place of the teacher as that of transmitter of facts and concepts. The roles of teacher and learner are closely linked to the broader framework and aims in a curriculum.

Following the 1994 elections, one of the first tasks of the National Education and Training Forum was to begin a process in which the national curricula were revised and certain subjects were rationalised (i.e. phased out). The purpose of this was to lay the foundations for a single national core curriculum following an outcomes-based approach, with the intended result that the learner would be able to achieve critical and developmental outcomes.

The White Paper on Education and Training, the South African Qualifications Act (Act 58 of 1995) and the National Education Policy Act (Act 27 of 1996) provided a framework for the educational changes.

The NQF was created to bring together education and training and so close the gap between the two. The principles that support the NQF ensure that the NQF will promote everything we do in South Africa to develop our people. The philosophy of the NQF accepts that good learning contributes to national development and recognises that learners have different needs. The NQF holds that all learning must be recognised and valued, that achievement standards should be transparent and uniform, and that learning should be a lifelong activity (Kramer, 1999:128–131). All this has an impact on how the teacher interprets and implements the curriculum.

Working at a secondary teaching level requires the teacher to take note of the Higher Education Qualifications Subframework as an integral part of the NQF, and to ensure the formal recognition and certification of learning achievement awards by an accredited institution (see [Chapter 3](#)).

2.3 THE INFLUENCE OF DIFFERENT WAYS OF UNDERSTANDING HOW LEARNING IS TAKING PLACE ON CURRICULUM INTERPRETATION AND IMPLEMENTATION

The discussion in [Chapter 1](#) made it clear that curriculum policy-makers or developers need to think very carefully about what knowledge they are including and what knowledge they are excluding from a curriculum, and why. In interpreting the content and preparing to teach it, a teacher's view of how learners learn will influence the teaching design. In [Chapter 1](#) we discussed how Tyler, Stenhouse and Freire approached curriculum development. The discussion highlighted an objective approach (Tyler), which is technical and instrumental in character; a process approach (Stenhouse); and a pragmatic approach intertwined with a sociopolitical purpose (Freire). Thinking about how learning takes place can be quite closely aligned with (contextualised) objectives, a learning process and learning for a particular purpose; all three approaches to curriculum development might feature in the interpretation and implementation of the curriculum (see [Chapter 1](#)), or the particular thinking about how learning takes place might be dominant in particular planning, subjects and/or fields.

2.3.1 Emphasising the setting of objectives

The belief about learning as achieving objectives (outcomes) and therefore “behavioural change” is aligned with the behaviourist approach; in other words, the focus is on gaining **knowledge** or **an ability** through the **use of experience**, with **equity**, **access**, **flexibility** and **quality**, aimed at changing the way in which learners **behave**. Therefore learning is approached as an objective (outcome) or product of processes that can be recognised or seen.

An emphasis on setting objectives might be because teachers want their learners to display particular behaviour and/or skills, which should be measurable and therefore visible. By setting objectives, teachers can organise learning to take place in a particular way and be able to predict and control what happens in the classroom.

Cajkler and Addelman (2000:2–3) explain that learners can be motivated to learn by attractive, interesting and achievable objectives (outcomes), and by being involved in learning by **getting positive reinforcement** – by being encouraged and praised, and by teachers identifying the learning problems of underachievers, rather than just reprimanding them.

Gagné (1985:28–35) argues that learners will be motivated to repeat a behaviour when they feel they can manage a task. So when the teacher sets particular learning objectives, the approach in planning teaching and learning includes dividing learning assignments into smaller units to give learners enough time to complete the tasks successfully. The learner can be further motivated by practising and repeating the newly mastered knowledge and skills regularly.

It is important, however, that with a holistic view of curriculum development and its interpretation and implementation, one should contextualise the aims, objectives or intended outcomes to suit the learning environment and the purpose of the subject field.

2.3.2 Approaching learning as a process

Shepard (1989:5–6) describes the process of creating understanding as learners' **constructions of their own cognitive maps of the interconnections between concepts and facts**. Viewing learning as a process will, according to Marlowe and Page (2005:7–10), be the result of questioning, interpreting and analysing information, and will furthermore include the ability to use the information to develop and alter the meaning and understanding of concepts and ideas.

With learning as process in mind, the teacher will consider the following regarding constructing understanding and creating new knowledge when interpreting the curriculum and planning teaching:

- The learner has prior knowledge and therefore does not come to school or the classroom as a “blank slate”. Conceptual knowledge cannot be transferred ready-made and intact from one person (the teacher) to another person (the learner).
- A learner makes sense of a new situation by making use of his or her own existing ideas, i.e. existing schemata; learning will modify / extend the schemata. Learning thus entails the learner re-organising and restructuring his or her existing knowledge, and this can only be done by the learner him- or herself (Bransford, Brown & Cocking, 2000:222). G.S. Hall pre-empted this notion as early as 1907 (1–38):

All now agree that the mind can learn only what is related to other things learned before, and that we must start from the knowledge that the children really have and develop this as germs, otherwise we are ... talking to the blind about colour. Alas for the teacher who does not learn more from his children than he can ever hope to teach them.

- The learner must be given a chance to explain and to provide reasons for his or her answers.
- Discussions and social structure are important because teaching and learning takes place in a cultural and socially linked environment (Borich & Tombari,

1997:177). In this social process learners learn from each other (and the teacher) through discussion, communicating and sharing ideas, actively comparing different ideas, reflecting on their own thinking and trying to understand other people's thinking by negotiating a shared meaning (Cobb, Yackel & Wood, 1992:331).

- Learners put thoughts into words; there is a very important link between language learning and understanding, therefore experience and learning are mediated through language (Nieman & Monyai, 2006:34–39).

For the teacher, approaching learning as a process might include variations of constructivist thinking such as **active learning** (Piaget and Vygotsky), **discovery learning** (Bruner) and **knowledge-building** (Feuerstein).

2.3.2.1 *Social cognition and how learning takes place*

As this chapter emphasises, the context has a profound impact on the development, interpretation and implementation of the curriculum. Vygotsky's observations of how higher mental functions developed historically within particular cultural groups, as well as individually through social interactions with significant people, strengthen his view that new habits – including speech patterns, written language and other symbolic knowledge through which meaning can be derived – are learned through social interactions (as described in Vygotsky (1978; 1982; 1987)). According to Vygotsky, culture and therefore the context in which the learner finds him- or herself can provide all the tools of intellectual adaptation needed for both **what to think** and **how to think**. Vygotsky argues that learners can internalise new knowledge and tools of thought primarily through **language** in a social setting.

Internalisation can be understood in one respect as “knowing how”. Gilbert Ryle indicated as early as 1949 that “learning how” or improving ability does not only mean acquiring information, because when working with truths which can be imparted, the learning can be relatively sudden. On the other hand, when dealing with procedures that need to be inculcated, the process of learning (inculcation) may be gradual. It makes sense to ask at what moment someone becomes apprised of a truth, but not to ask at what moment someone acquires a skill (Ryle, 1949:58). Although there is a difference between “knowing that” and “knowing how”, there is a growing emphasis on “knowing how”. The internalisation of knowledge (knowing how) can be a result of mastering skills through social interaction, which occurs as the learner operates within a society. The process of internalising can also lead to a learner creating a new or unique way to apply particular knowledge or skills.

Language was the form of mediation that preoccupied Vygotsky above all others, but when speaking of **signs**, or **psychological tools**, he had a more extensive set of mediational means in mind; a set that included “various systems for counting; mnemonic techniques; algebraic symbol systems; works of art; writing; schemes, diagrams, maps, and mechanical drawings; all sorts of conventional signs, and so on” (Vygotsky, 1981:137). Higher mental functions are, by definition, culturally mediated; they involve not a “direct” action on the world, but an indirect action, one that takes previous knowledge and incorporates it as an aspect of action. Ways in which

the mental work is adapted and changed to suit the present may include alteration, replacing of functions, a re-creation or even an abolishment of what is not necessary (Vygotsky, 1981:19–140). This means that mental processes can be shaped and transformed by language and social interaction.

The teacher has to consider in the teaching plans what the impact of context and social setting and the interactions with learners would be. Furthermore, the way a teacher plans to mediate the knowledge (content) included in the curriculum will be determined by social settings and language abilities.

2.3.2.2 *Active learning*

According to both Piaget and Vygotsky, knowledge must be **discovered and constructed through the learner's activities**. They argue that learners learn from concrete experience, because by nature learners are continually active and therefore must find out about and make sense of the world. As they do so, they construct the mental structures that permit them to deal with ever more complex information.

Mwamwenda (2004:95–97) stresses Piaget's focus on the importance of actions in the acquisition of knowledge. Piaget argued that activity and being actively involved in the learning process is the foundation of cognitive development. Teachers should therefore give learners the opportunity to manipulate objects experimentally and actively (Nieman & Monyai, 2006:93).

Piaget holds the idea that knowledge is not simply acquired from outside the individual, but is constructed from within. Once knowledge is constructed internally, it is then tested against reality in the same way as a scientist tests the validity of hypotheses. Learners construct and attach meaning to what they learn. Atherton (2005) explains that, like a scientist, the individual learner may discard, modify or re-construct knowledge based on its utility in the real world. Much of this construction (and later reconstruction) is in fact done subconsciously.

Following Piaget's ideas, in planning for teaching a teacher would concern him- or herself with gaining an understanding of thinking processes behind particular responses (Labinowicz, 1980:20–28). In other words, the teacher is interested not only in what learners know, but also how they come to know and retain the ability to more accurately represent the world and perform logical operations on representations of concepts grounded in interactions with the world.

2.3.2.3 *Discovery learning*

The world constantly evolves, and one must adapt to the changing environment through the process of learning. Acquiring and adapting knowledge serves the purpose of making sense of the world. Past conceptions, which were once adequate and appropriate for the learner's perceived reality, are replaced by new conceptions that better fit the present context. Bruner (1962:123) states that "to understand something is to give up some other way of conceiving it". Bruner views learning as a process through which the learner selects and transforms information, constructs hypotheses and makes decisions, relying on a cognitive structure to do so. Cognitive structures (i.e. schemata and mental models) give meaning and organisation to

experiences and allow the individual to “go beyond the information given”. Bruner felt that knowledge was best acquired when learners were allowed to discover it on their own (Milner, 1991:464–467).

Bruner (1966:26) argues that “practice in discovering for oneself (learning by doing) teaches one to acquire information in a way that makes that information more readily viable in problem solving”. The learning-by-doing idea requires learners to, for instance, deal with questions, perform experiments, do research and work out a project to arrive at solutions. Teachers might plan to use discovery learning where they need learners to draw on their experiences and prior knowledge to work towards solutions. Thinking about learning as “discovery” is inquiry-based. The teacher can thus anticipate that this kind of learning will take place in problem-solving situations where the learner draws on his or her own experience and existing knowledge; learners are encouraged to discover facts and relationships and to learn new truths on their own through action and experience. Learners interact with the world by exploring and manipulating objects, wrestling with questions and controversies, or performing experiments. As a result, learners may be more likely to remember concepts and knowledge discovered on their own (in contrast to a transmissionist model).

Including activities that are linked to the idea of learning as a process in teaching plans might have the following advantages:

- Encourages active engagement
- Promotes motivation
- Promotes autonomy, responsibility and independence
- Stimulates the development of creativity and problem-solving skills
- Provides a tailored learning experience (Bruner, 1986:26 in Du Toit, 2000:76).

In all Bruner's work it is evident that the earlier and more often learners are engaged, the better the possibility of creating active learners who value knowledge and education. Bruner's most beneficial ideas warrant discussion and application. For that reason it is necessary to see beyond scaffolding and the spiral curriculum and recognise Bruner's urge to develop young minds with an avid interest in learning beyond the classroom and throughout life (Booyse, 2010:42).

2.3.2.4 Learning as building knowledge

Reuven Feuerstein (born 1921), a cognitive psychologist, considers the teacher's main role to be that of mediator, whose task is to assist learners in building or modifying knowledge through learning. The mediator has to work with the learner in such a way that both of them discover how the learner learns and how to improve the learner's learning process. According to Feuerstein (1990; 1995), lack of such a mediated learning experience results in deficient cognitive functions in the individual. Feuerstein (1990) argues that mediation of meaning occurs when the mediator communicates the importance of and reason for an activity – only then does a learner receive a holistic view on why he or she has to learn particular content. Other qualities of mediation that might be present include mediation of the feeling of

competence; mediation of regulation and control of behaviour; mediation of sharing behaviour; mediation of the feeling of belonging; mediation of challenge; mediation of goal-seeking, goal-setting and goal-planning behaviour; and mediation of an optimistic alternative.

2.4 TEACHING STRATEGIES AND TOOLS TO ENHANCE IMPLEMENTATION

If you don't know where you are going, any road will take you there. – Lewis Carroll, *Alice's Adventures in Wonderland* (1865)

The quote from Carroll illustrates the importance of planning for teaching and learning to act as a pathway to achieving a set objective, goal or outcome and leading to an effective teaching-learning situation. Interpreting the curriculum and planning to teach requires arranging content in such a manner that knowledge transfer can take place most effectively. Planning should also identify the current level of learner understanding, define the final outcome (goal) of the teaching process (instruction), and provide some assistance in the process of understanding.

From the discussion in [Section 2.2](#) it is clear that planning and designing happens within a contextual whole; therefore the teacher should consider various teaching strategies in planning for teaching and enable learning that suits the needs of the learners (Figure 2.3).

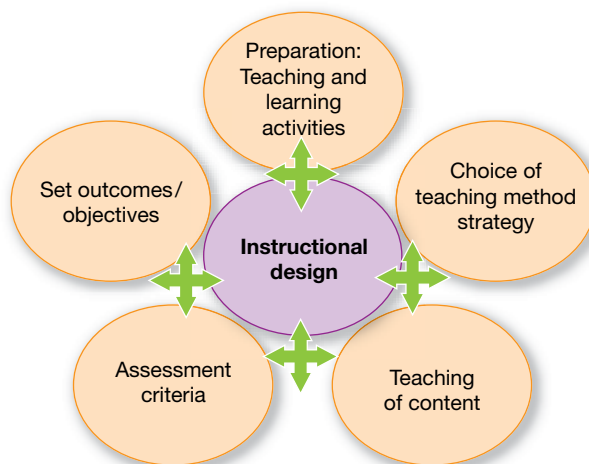


Figure 2.3 Instructional design: planning teaching

2.4.1 Reciprocal teaching

Reciprocal teaching allows for the creation of a dialogue between learners and teachers. This two-way communication becomes an instructional strategy because it encourages learners to go beyond answering questions and to engage in the discourse (Driscoll, 1994; Hausfather, 1996). A study conducted by Brown and Pal-

incsar (1989), as cited by Driscoll (1994), demonstrated the Vygotskian approach to reciprocal teaching methods in their successful programme to teach reading strategies. The teacher and learners took turns leading small-group discussions on a reading. After modelling four reading strategies, learners began to assume the teaching role. Results of this study showed significant gains over other instructional strategies (Driscoll, 1994; Hausfather, 1996).

2.4.2 Cognitively Guided Instruction (CGI)

Cognitively Guided Instruction (CGI) is another strategy for implementing Vygotsky's theory on the importance of language and listening in teaching as a social construct. For instance, learners are able to solve problems without direct instruction by drawing upon informal knowledge of everyday situations and through dialogue (Carpenter, Ansell, Franke, Fennema & Weisbeck, 1993). Carpenter, Fennema, Franke, Levi & Empson (2000) describe CGI as an approach to teaching mathematics with the main focus on the practice of listening to learners' mathematical thinking and using it as a basis for instruction. According to Hausfather (1996), it involves the teacher and learners exploring mathematics problems and then sharing their different problem-solving strategies in an open dialogue.

Carpenter et al. (2000) remind that a variety of practices to extend the learners' thinking might be used in the classroom. The teachers' knowledge and beliefs might influence their instructional practice; their understanding of learners' mathematical thinking can also influence their planning and instruction. Listening to learners' thinking about the domains of addition and subtraction, multiplication and division, base-ten concepts, multidigit operations, algebra, geometry and fractions provide guidance to teachers about what learners really understand about these domains. It seems that the teachers' professional judgement is central to making decisions about how to use information about learners' thinking, but it again underlines the importance of listening and dialogue in any guided instruction.

2.4.3 Scaffolding builds learning bridges

Scaffolding requires the teacher to provide learners with the opportunity to extend their current skills and knowledge. The teacher must engage learners' interest, simplify tasks so they are manageable, and motivate learners to pursue the instructional goal. In addition, the teacher must look for discrepancies between learners' efforts and the solution; control for frustration and risk; and model an idealised version of the act (Hausfather, 1996). It is therefore of utmost importance that a teacher chooses the appropriate teaching strategy to enhance teaching and learning.

What learners learn in the classroom will depend to a large extent on what they already know (prior knowledge), which means the teacher must try and understand what happens in the learner's mind. Scaffolding is one teaching strategy that can be used to help the teacher understand the learner's way of thinking (Killen, 2007:11). Knowing **how** a learner thinks gives the teacher an advantage in predicting how the learner will react to questions in the assessment process; this knowledge is also imperative for the use of scaffolding as a teaching strategy.

In educational terms, scaffolding is a teaching strategy that provides a temporary, supportive and adjustable framework for a learner, which enables him or her to participate in or complete a task/activity that is beyond his or her reach. According to Gagnon and Collay (2006:23–108), scaffolding is needed when a learner encounters difficulties or problems in a particular task or activity. Such a situation requires intervention by a more knowledgeable person to interpret the situation and guide and support the learner in constructing a higher level of understanding (Gagnon & Collay, 2006:23).

Scaffolding as a strategy carries learner-centred features because of the interaction and collaboration between the teacher (the more knowledgeable person) and the learner. Learning happens when scaffolding is used as a process of support or guidance to help learners construct new meaning and knowledge on the basis of existing knowledge. The ultimate aim of scaffolding is to develop specific skills and to achieve a more advanced level of understanding.

For Balaban (1995:52), scaffolding is the way the teacher “guides the learner’s learning via focused questions and positive interactions”. A further discussion of how questions can be used in a constructivist manner to enhance the assessment process follows in [Chapter 4](#).

Some key features of scaffolding that can be applied in the teaching-learning situation are (Gagnon & Collay, 2006:23–108) as follows:

- Direct the learner’s attention to the particular starting point of the task and the direction in which to proceed. Teaching takes place through the medium of language, and therefore the teacher has to guide the construction of meanings because the learner may attach a different meaning to the message from that intended by the teacher. The quality of “talk” between the teacher and learner is of extreme significance. It is also essential that the teacher should “tune in” to the learner’s present ability or understanding.
- Simplify the task/activity by providing different steps to follow (making the task/activity easier to complete). The teacher must choose ways of supporting/guiding the learners that are suitable for the existing knowledge of the learner.
- Highlight crucial features (i.e. important aspects of the task/activity).
- Act as an external source of information providing additional and/or valuable information to enable the learner to proceed.
- Fill in missing pieces of information that clarify some steps in the task. The teacher must be aware that the learners are coming to class with different ideas about a particular topic.
- Provide emotional support/verbal or non-verbal reinforcement.
- Allow peer support.
- Interpret the level of knowledge and react accordingly to provide suitable support to guide the learner in the construction of new knowledge. Environmental and social structures have a great influence on interpretation of content and construc-

tion of meaning – especially where learners have limited experience and existing knowledge.

Language problems, socio-economic problems, attitudes, low levels of motivation, lack of existing knowledge and contextual influences are all challenges in applying scaffolding effectively in the classroom situation. Scaffolding can especially be used as a tool to overcome the above-mentioned obstacles and to enable a learner to develop a **specific skill, grasp a particular concept or achieve a particular level of understanding**. The evidence that the learner has acquired the skill / ability / knowledge to complete the task or activity successfully indicates what level of independent competence he or she has reached.

We agree with Henson (2004:15) that learners have to be able to question their own understanding and compare their version of the truth with that of the teacher and fellow learners in order to arrive at a new level of understanding. This creates a dynamic interaction between task, teacher and learner. Learners and teachers have to develop an awareness of each other's viewpoints and then look at their own beliefs, standards and values, thus being both subjective and objective at the same time. This interaction is a means to knowledge building and encompasses foundational learning, subskills and sociocognitive dynamics. The interaction involves making a collective inquiry into a topic and coming to a deeper understanding through interactive questioning, dialogue and the continuous improvement of ideas.

The teacher then becomes a guide and allows learners to take responsibility for their own learning and be involved in planning, reflection and self-assessment – especially where the focus is solely on understanding through collaboration. Depending on a learner's prior experiences, related cases and scaffolding as explained above may be necessary for support. As learned from the ideas of Vygotsky, the cultural group in which learners find themselves also plays a major role in the formation of concepts and acquisition of new levels of knowledge. All the techniques mentioned should advance the current understanding of each learner within a group to a level beyond his or her initial knowledge level, which may result in an advanced understanding of that topic, concept or idea (Booyse, 2010:74–76).

It appears that there is a link between scaffolding in a simulated teaching environment and the opportunity for problem solving in a contextualised, real-world situation. Simulation as a teaching strategy provides the opportunity for problem solving and scaffolding and is briefly described in Section 2.4.4.

2.4.4 Simulation as discovery learning in action

In a **simulation**, real circumstances are imitated in the classroom. This has the advantage that learners can work within the simulated situation as if it is real life (Henson, 2004:278–280). According to Maley (1997:159), simulations are events that have “reality of function”, and although there is no direct contact with the real world, the simulation must have a structure that includes particular facts and information. The use of “what if” questions appears to be fruitful in a simulated environment.

Du Plessis, Conley and Du Plessis (2007:32) make it clear that simulations are problem-centred and learners should therefore take a simulated situation seriously and assume responsibility for their actions and decisions. In this way, the learners experience the reality of the situation, with all the rights, privileges, obligations and responsibilities attached to it. This means that a simulation provides the ideal opportunity to practice problem-solving skills, including the process of choosing, trying and testing strategies, in the simulated environment. Existing knowledge can be used to work with problems in a simulated environment and in such an environment, new knowledge can be developed by solving problems.

In the context of decision making, simulation also involves analysing the results of the experiments (as mentioned above), making judgements about how the real situation (to the extent that it is represented by the model) would manifest itself under experimental conditions, and formulating a plan of action.

The greatest advantage of simulation is that it is true to life. A case study or a role play would only simulate the decisions that have to be made in real life, but not the environments and context in which the decisions have to be made (Henson, 2004:278–280).

2.4.5 Problem solving as teaching strategy

Killen (2007:218–219) cautions that using problem solving as a teaching strategy should be distinguished from teaching learners how to solve problems, for instance “word sums” in Mathematics. Using problem solving as a teaching strategy is also not an application of the problem-solving model described by Kirkley (2003:3–7). The application of such a model may include ideas from the 1960s and 1970s on defining the problem, exploring the solutions, acting on strategies and investigating the effects of the decision, as well as the more current view that problem solving includes a complex set of cognitive, behavioural and attitudinal components (Kirkley, 2003:4).

It is clear that a metaskill-based approach is needed when using problem solving as a teaching strategy. This implies that context-based teaching is important in ensuring that learners can **learn from problem solving**, rather than merely knowing how to solve problems. If the teacher only teaches learners the latter skill, they do not learn much more than how to apply a sequence of steps in order to solve a very specific type of problem; but if the teacher restructures a problem to place the emphasis on the learners exploring all aspects of it (rather than finding the “answer”), these learners are more likely to develop an understanding of the principles and concepts embodied in the problem (Mayer, 1998:55). Killen (2007:220) rephrases the need to “learn from problem solving” in his explanation that using problem solving as a teaching strategy places the emphasis on “developing new knowledge *through* solving problems”.

Switching between the parts of a problem, its intermediate aspects and the final goal required reminds one of Gagné’s (1985:178–179) definition of problem solving as the “synthesis of other rules and concepts into higher order rules which can be applied to a constrained situation”. Gagné (1985:187–190) is of the opinion that instruction in problem solving must focus on both declarative and procedural knowl-

edge in order to be really effective. Declarative knowledge is of significance in the application of problem solving as a teaching strategy, especially because declarative knowledge is closely related to context knowledge, which might be the most critical feature of the skill of problem solving (Booyse, 2010:78–79). Moreover, in order to improve a problem-solving skill, learners need to develop a stronger base of declarative knowledge, synthesise their knowledge into an appropriate model and be able to recognise common solution strategies across many problems and contexts. In other words, problem solving can be used as a teaching strategy for expanding learners' knowledge and understanding of content, developing their thinking skills and encouraging them to think about their own learning processes.

2.4.6 Discussion as a teaching strategy

A **discussion** fulfils various aims of the teaching-learning process. Some of these aims relate to obtaining knowledge and acquiring skills and attitudes, while others relate to motivation and personal satisfaction that arise through discussion. It is not only the teacher who takes action, but also the learners. One can think of discussion as the art of cooperative thinking done aloud and the exchange of ideas. The intention of a discussion is not to provide information, but rather to exchange knowledge and understanding. It appears that learners can be motivated and encouraged through a discussion to critically analyse assumptions, achieve creative solutions to problems and even develop cooperative skills. The teacher can use a discussion to involve learners in objective, informed and reflective thinking.

Newby (1992:92–94) claims that learners often learn more from their fellow learners in a lively discussion between the group members than from a teacher's explanation of concepts. For a discussion to be successful, the learners have to understand that it should be purposeful; to have a good discussion about particular concepts, they have to exchange ideas and facts in a structured and systematic manner and share their opinions (Killen, 2007:133–134). It is recommended that teachers ask well-formulated questions in random order in a group, and not in the order in which the learners are sitting, in order to encourage good discussion. Asking the learners randomly keeps everyone on their toes, because no one knows who is going to be asked next; in this way the so-called “creeping death approach” that often creates tension for the learners sitting close to the teacher is eliminated. When using discussions the aims of the teacher might be to obtain knowledge; motivate learners to develop cooperative skills; encourage critical analysis of assumptions and attitudes; and stimulate creative solutions.

2.4.7 M-learning as a teaching strategy

What is m-learning?

Mobile learning (m-learning), though increasingly popular given the rise in mobile phone penetration and advances in wireless and 3G technologies, has been part of the education landscape for decades. During this time, the term has been conceptualised in many ways, from a **technocentric** perspective, meaning the use of

handheld electronic devices for educational activities in or outside classrooms, to more **learner-centric** “processes of coming to know through conversations across multiple contexts amongst people and personal interactive technologies” (Sharpley, Arnedillo-Sánchez, Milrad & Vavoula, 2007, as quoted in Pouezevara, 2012). The key distinction is whether the focus is on the mobility of the learner, or on the mobility of the device. In the device-centric view, mobile learning is often equated with the mobile phone, the personal digital assistant or more recently the tablet computer (Pouezevara, 2012). Pouezevara (2012) puts it as follows:

However, these technologies are often used in situations where learners are stationary, or perhaps mobile but ignoring the environment around them, in which case the content and pedagogy risk imitating techniques used on stationary computers. In the learner-centric view, what separates m-learning from e-learning is the spontaneous nature of the learning and the way in which it becomes context-specific through interactions between the learner, the device and the environment. According to this definition of m-learning, many things can facilitate the learning process, including books or other media or found objects; but, importantly, the technology enables communication between learners, learner and teacher, or other means of automatic feedback. In either case – technocentric or learner-centric – m-learning requires that the traditional instructional design of educational technology must be rethought, taking advantage of the characteristics and affordability of mobile technologies.

M-learning = microlearning

Microlearning is a theory of instructional design that suggests that people learn more effectively if information is delivered in small units that are easy to understand and apply (Habitzel, Märk, Stehno & Prock, 2006). As a teaching method, it implies breaking content into small teaching units and delivering them at a modified pace and timing (Edutech Wiki, 2012). The characteristics of m-learning – using smaller, connected mobile devices independently of classroom time, space and teachers – lend themselves to a microlearning perspective of content development and delivery. First of all, delivering only small units of learning at a time is the most feasible way to deliver any content at all on many mobile devices – especially in developing countries – given bandwidth limitations, the cost of data transfer and screen sizes (Pouezevara, 2012).

From a pedagogical perspective, the timing of such micro-units of learning is important for encouraging “anytime, anywhere” learning, and situating it within the environment where learning will need to be applied later. This concept of situated, just-in-time microlearning enabled by mobile devices is demonstrated by widespread examples of “apps” and programs such as mobile “coaching” services, which deliver daily messages about health and lifestyle to subscribers on their mobile phones. The sequenced and situated nature of the messages appears to encourage behaviour change more than once-off classes do (Pouezevara, 2012).

M-learning = multimedia learning

Multimedia for teaching and learning is also not a new concept, nor does it apply

exclusively to mobile learning. “The use of video for microteaching and broad instructional delivery has been common practice for many years in teacher training programmes in developed and developing countries. Today, mobile, digital recording devices and portable projectors have made this method more accessible to teachers and teacher trainers in developing countries. Short video and audio clips can be transferred via mobile data networks, or transferred manually between feature phones, further increasing the possibilities for effectively using video for individual and peer learning” (Pouezevara, 2012).

“‘Flipped’ classrooms around the world have emerged from the ability to view videos and other advanced learning content independently outside the classroom, with the teacher acting more as a facilitator than a lecturer and thus increasing the classroom time that can be dedicated to practice and active engagement with content. New advances in technology and increasingly affordable devices are changing the way traditional interactive radio instruction is being delivered, making it more interactive and truly ‘multimedia’ by combining radio broadcasts with phone-in or text messages to the show, for example. It can also be more mobile now that radio broadcasts can be recorded and stored on digital media players” (Pouezevara, 2012).

“For example, an m-learning pilot in Malawi tested the feasibility of using a portable MP3 player to support preservice teachers in an open and distance learning training programme. Text display, audio and video playback, FM radio and photo and video recording were combined in one low-cost device. The programme enabled teachers to review five weeks of lessons and required them to create audiovisual materials as part of the programme (Carrier, 2011). Augmented reality and context-aware applications for smartphones or tablets allow learners to engage with the environment around them through video and photo capture, and manipulate these to apply mathematical or scientific theory to real-world situations” (Pouezevara, 2012).

“Therefore in addition to being an appropriate pedagogical model on its own, multimedia teaching is also a form of microlearning, if delivered in short, strategic bursts. This type of teaching is particularly relevant to teachers in developing contexts, who are often undertrained and inexperienced. Approaching m-learning from the perspective of mobile multimedia opens up possibilities of ‘virtual mentoring’ and rich multimedia distance learning as alternatives to traditional correspondence-based forms of open and distance learning that are still common in low-resource environments. It allows teachers to take learning out of the classroom and be less dependent on static textbooks to explain complex, multidimensional concepts” (Pouezevara, 2012).

An additional “m” could be “motivated learning”. Experience suggests that using technology and being in control of one’s own learning through m-learning can increase motivation and engagement. This is particularly true for game-based learning, which is increasingly available on mobile phones (Pouezevara, 2012).

“E-learning” as a term clearly links to electronic media, and recalls other related terms for computer- and web-based applications such as email. Similarly, “distance” learning refers to learning that is removed from the instructor or classroom but is independent of any specific pedagogical medium. The term “m-learning”, unlike

these two predecessors, is ambiguous: are we talking about mobility and learning on the move, or are we talking about learning with mobile devices, such as mobile phones? (Adapted from *Mobiles for teaching (and learning): supporting teachers with content and methods for reading instruction*, Edutech Wiki, 2012). Figure 2.4 shows the new approach to teaching and learning.

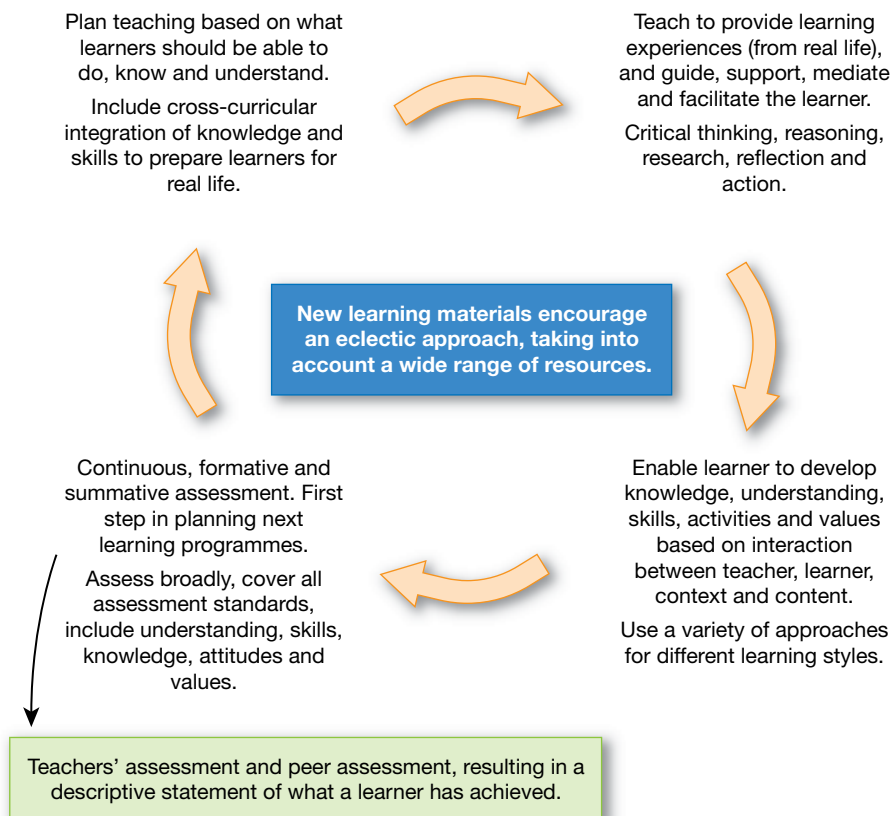
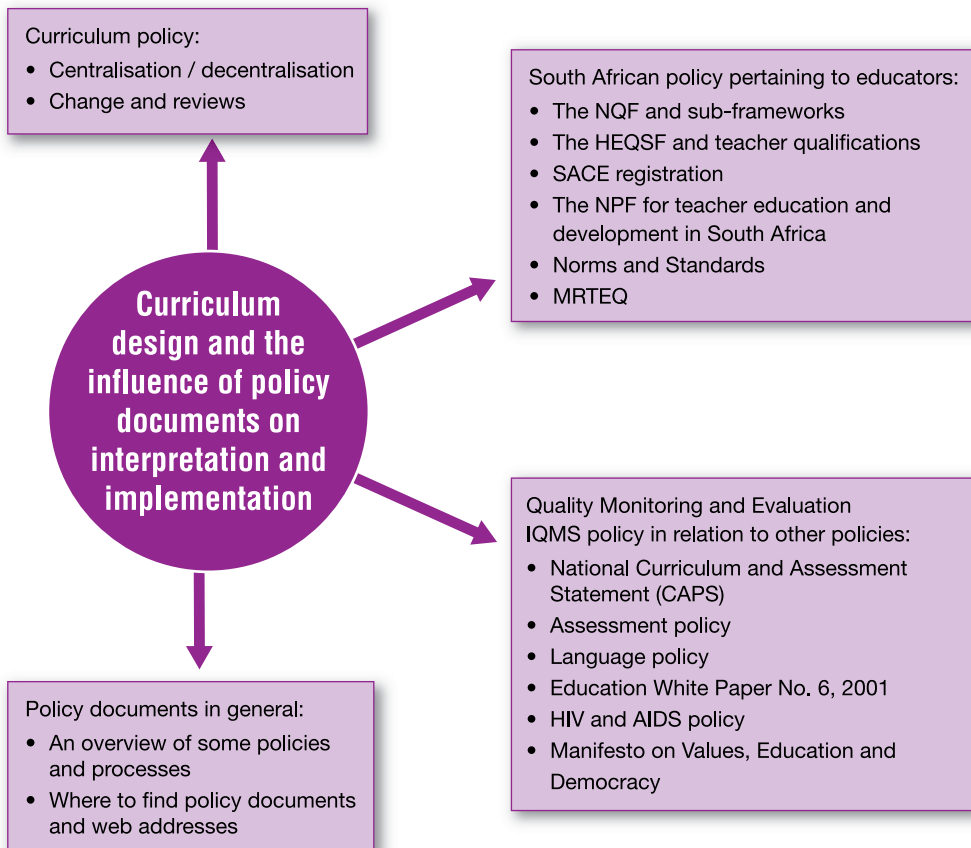


Figure 2.4 New understanding of planning and teaching

2.5 CONCLUSION

Understanding how your planning and teaching design are influenced by various factors enhances praxis. Only when teachers acknowledge and consider the impact of context and/or views, consider the role of language and mediation in the teaching and learning situation and realise the influence of the particular teaching strategies chosen, can they plan effective teaching and learning. Applying the knowledge gained will lead to a new way of thinking about the interpretation and implementation of the curriculum – a real paradigm shift.

Curriculum design and the influence of policy documents on interpretation and implementation



3.1 INTRODUCTION

This chapter continues the discussion in [Chapter 2](#) on curriculum design, with specific reference to the South African situation regarding curriculum changes and the influence of educational policy on curriculum interpretation and implementation. For a curriculum to be effectively implemented, teachers need to take many factors into consideration. They must have a sound knowledge of the intended policy documents and the ability to interpret and plan according to these documents, as well as selecting and preparing suitable textual and visual resources for learning. This chapter aims to familiarise teachers with the National Qualification Framework (NQF), its subframeworks and key aspects of educational policy that might influence curriculum interpretation and implementation.

3.2 CURRICULUM AS POLICY

3.2.1 The question of centralisation and decentralisation

Governments have to make substantive choices to guarantee the sustainable quality and social relevance of education. Different strategies are used to weigh and define the core of the curriculum and to legitimise and validate the choices made. Experts and stakeholders of many kinds may play a part in this. When justifying curricular choices, the first arguments put forward are those concerning the relevance and desirability of the objectives and the content components. Obviously, all interested societal parties want to join in this debate; however, where the practicality of their wishes is concerned, schools and teachers must lead the discussion.

Important questions regarding expected competences, social support for innovations, learning time and educational arrangements include the following:

- Can learners fulfil the new roles expected of them and achieve the expected competences?
- Do teachers have the necessary expertise (competences) to implement the innovations?
- How positive are schools and teachers about the intended change?
- Can the innovation be carried out within the available time frame?
- Are relevant teaching approaches and learning resources available?

Besides the choice to follow a technical, process or pragmatic approach in curriculum development, as discussed in [Chapter 1](#), the organisation of curriculum policy making also considers whether

- the emphasis should be on a communal and uniform educational programme or on flexibility, diversity and choices for schools and learners
- there should be central steering or decentralised autonomy and responsibility
- supervision should be based on a firm control system and on centrally defined results, or on a decentralised accountability system based on confidence in the competences of schools and teachers.

There are different ways in which governments control curriculum decision making. Many countries have a highly centralised education system. At government level a defined curriculum contains detailed regulations for objectives and content, school time, selection of educational materials, teaching standards and assessment. Currently there is little room for curricular input by schools and teachers. Lately, there have been periodic shifts and movements in curriculum policy towards more or less central or decentralised control in most countries (Kuiper, Van den Akker, Letschert & Hooghoff, 2009).

Both forms of curriculum policy have strengths as well as weaknesses (Fullan, 2008; Hargreaves & Shirley, 2009). A centralised, detailed, prescriptive curriculum presents a clear view of the desired results and there is a view that in practice it offers more improved learning results than a more decentralised model does. However, it turns out to be a very complex matter to achieve these effects sustainably. On the other hand, a more flexible curriculum, to which teachers might add richness when they interpret and implement it, requires the direct involvement and co-ownership of schools and teachers. This is highly motivating and will stimulate professional development; as a result, it will lead to a more sustainable form of educational improvement. However, this policy lacks a clear, communal focus on objectives and content, making it more difficult for schools and teachers to work systematically towards large-scale educational improvement. A more flexible curriculum also expects teachers to be well trained both in a particular field and in methodology, and to display the necessary skills and competencies to act as curriculum interpreters and implementers.

3.2.2 Curriculum change and review in South Africa

In 1995, the government carried out a national audit on teaching that revealed many disparities and problems. In 1997, the Department of Basic Education launched its new curriculum policy, Curriculum 2005, which in its ideology, content and pedagogical approach was in strong contrast to the curriculum in effect at the time. Curriculum 2005 was an outcomes-based model. It drew from models operating in some highly developed countries and sought to place the South African curriculum among the most progressive internationally. This curricular policy became a highly contested issue within South Africa (Department of Education, 2000a). In 2000, the Minister of Education set up a Curriculum Review Committee, which led to a modification of the curriculum with a more “streamlined” approach.

The policy and the ensuing debate caused much confusion and uncertainty. The “cascade model” of in-service education proved to be very inadequate and reached the schools in a much-diluted form. In 2000, the government published the Norms and Standards for Educators (NSE). This set out, in broad generic terms, the requirements of the Department of Education in respect of the knowledge, values and skills that educators / teachers must acquire. It represented a competence-based approach to teacher education. The word “educator” was preferred to “teacher” and was aimed at “encompassing all personnel with an educational role to play” (Department of Education, 2000a). In 2002 the curriculum was reconstructed once

again into a Revised National Curriculum Statement that was approved on 15 April 2002 and implemented in 2004 (Department of Basic Education, 2010:2–7). This revised version became known as the National Curriculum Statement (NCS). The 2008 Grade 12 group wrote the first national examination to achieve the National Senior Certificate, a 130-credit certificate at Level 4 on the NQF.

In July 2009, the Minister of Basic Education appointed a panel of experts to investigate the challenges and problems experienced in implementing the NCS. During 2011 the NCS was reviewed again, amendments were made and the amended NCS was named the Curriculum and Assessment Policy Statement (CAPS) (Department of Basic Education, 2009; 2011b; Pinnock, 2011). On 28 December 2012 the approval of the regulations pertaining to the amended NCS Grades R–12 was published in *Government Gazette* No. 36041. According to this *Gazette*, the CAPS stipulates the aim, scope, content and assessment for each subject listed in the NCS Grades R–12 (Department of Basic Education, 2012c:3).

Besides the curriculum changes, the National Policy Framework for Teacher Education and Development in South Africa was issued in 2006, which “has been a long time in preparation, and is certainly overdue given the state of our education system” (Department of Education, 2008b:27). Another wide-ranging change took place in 2009, namely the separation of the Department of Education into the Department of Basic Education and the Department of Higher Education and Training; these bodies are custodians of the delivery of general education and training and higher education and training respectively (Bot, 2013:6).

3.3 SOUTH AFRICAN POLICY PERTAINING TO TEACHERS

3.3.1 Understanding the National Qualifications Framework and its sub-frameworks

The Minister of Higher Education and Training determined the three sub-frameworks that comprise the NQF through Notice 1040 of 2012: *Government Gazette* No. 36003, dated 14 December 2012 (Department of Higher Education and Training, 2012). In accordance with the NQF Act (Act 67 of 2008), there were to be three sub-frameworks, each to be developed and managed by a Quality Council.

The three sub-frameworks and their quality councils (QCs) are:

1. The General and Further Education and Training Qualifications Sub-Framework (GFETQSF), contemplated in the General and Further Education and Training Quality Assurance Act (Act 58 of 2001), as amended by the NQF Act of 2008, is overseen by Umalusi (*Government Gazette*, Vol. 549, No. 36721 of August 2013).
2. The Higher Education Qualifications Sub-Framework (HEQSF) contemplated in the Higher Education Act (Act 101 of 1997), which is overseen by the Council on Higher Education (CHE) (*Government Gazette*, Vol. 549, No. 36721 of August 2013).
3. The Trades and Occupations Qualifications Sub-Framework will be known as the Occupational Qualifications Sub-Framework (OQSF), as soon as it is amended by the Quality Council for Trades and Occupations.

3.3.2 The Higher Education Qualifications Sub-Framework and teacher qualifications

The HEQSF is a qualifications sub-framework that sets out level descriptors, the main qualification types and their descriptors, and standards for specific qualifications.

Level descriptors and descriptors for a qualification are expressed in terms of learning outcomes. Credits are defined in terms of study time, for example the number of academic years of study required or the number of notional hours of study. For example, one credit equals 10 notional hours.

The NQF has ten levels. Level 1 is general education (grades R–9) and levels 2–4 are further education (grades 10–12), which are managed by Umalusi. The HEQSF occupies levels 5–10; levels 5–7 are undergraduate and levels 8–10 are postgraduate (see Table 3.1).

Table 3.1 HEQSF: Qualifications, levels and minimum credits

NQF Level	Minimum credits per qualification (and at exit level)	Qualification type
10	360 (360)	Doctoral degree
9	180 (120)	Master's degree
8	120 (120) 120 (120)	Honours degree Postgraduate diploma
7	480/360 + (120) 120 (120)	Bachelor's degree Advanced diploma
6	360 (240) 120 (120)	Diploma Advanced certificate

A “qualification” is the formal recognition and certification of learning achievement awarded by an accredited institution. The South African Qualifications Authority (SAQA) stipulates that the learning outcomes of all South African qualifications should include a critical cross-field of generic skills to promote lifelong learning, as well as discipline-specific, domain-specific or specialised knowledge, skills and reflectiveness. The format for specifying a qualification, where appropriate, should include the title and purpose of the qualification, its NQF level, the credits it carries, rules of combination of its learning components, exit-level outcomes and associated assessment criteria, entry requirements, forms of integrated assessment, arrangements for the recognition of prior learning and arrangements for moderation of assessment.

A **learning programme** is a purposeful and structured set of learning experiences that lead to a qualification. Tools to be used in designing learning programmes that lead to teacher education qualifications, such as levels, credits and integrated and applied knowledge, are discussed in the new policy on minimum requirements for teacher education qualifications (Department of Higher Education and Training, 2011:12). Programmes may be discipline-based, professional, career-focused, and

trans-, inter- or multidisciplinary in nature. A programme has recognised entry and exit points. All taught higher education programmes should have core and elective elements (this requirement is optional for research-based programmes). The CHE has a statutory responsibility for coordinating and generating standards for all higher education qualifications and for ensuring that such qualifications meet the criteria for registration by SAQA on the NQF.

3.3.3 Teacher registration: the role of the South African Council for Educators

The South African Council for Educators (SACE) is the professional council for educators / teachers, which aims to enhance the status of the teaching profession through appropriate registration, management of professional development and the inculcation of a code of ethics for all educators / teachers. The SACE Act (Act 31 of 2000) states that, by means of the functioning of the council, SACE is to

- provide for the registration of educators / teachers
- promote the professional development of educators / teachers
- set, maintain and protect ethical and professional standards for educators / teachers.

As the statutory body for professional education, SACE must also manage the implementation, management and quality assurance of the Continuous Professional Teacher Development (CPTD) system. Each educator / teacher is expected to earn a target number of professional development points in each successive three-year cycle by undertaking a variety of professional development activities – endorsed by SACE on grounds of their fitness of purpose and quality – that suit their own needs and requirements or that are required by their employers (Department of Education, 2008a).

3.3.4 The National Policy Framework for Teacher Education and Development in South Africa

Policy-makers in government have a clear vision of the kind of teacher they want. This is why, in 2000, the National Department of Education issued the Norms and Standards for Educators document (Department of Education, 2000a), which has since been replaced by the Policy on Minimum Requirements for Teacher Education Qualifications (Department of Higher Education and Training, 2011). Teachers are expected to be familiar with the contents of this policy document.

The revised policy framework deals with teachers in schools and with equipping the teaching profession to meet the needs of a democratic South Africa in the 21st century. However, it is the responsibility of teachers themselves, guided by their own professional body, SACE, to take charge of their own development by identifying the areas in which they need to grow professionally and by using all available opportunities for this purpose, including those provided for in the Integrated Quality Management System (IQMS) (see sections 3.4.1 and 3.4.2).

All initial teacher education programmes are the responsibility of the Department of Higher Education and the qualifications structure for teacher education is subject to the Minister of Higher Education and Training's policy on qualifications in terms of the Higher Education Act, 1997 (Department of Education, 2006a:14). The National Policy Framework for Teacher Education and Development in South Africa (Department of Education, 2006) discusses the initial professional education of teachers as well as CPTD. According to the framework, two broad pathways lead to the first professional qualification for teachers. The first pathway is the 480-credit Bachelor of Education (BED) degree, which includes the equivalent of a year's supervised practical teaching experience and is at Level 7 on the NQF. The second is an appropriate 360-credit first degree (for example, BA, BSc, BCom, BTech) followed by a 120-credit Advanced Diploma in Education. The latter will replace and be equivalent to the current Postgraduate Certificate in Education, the Higher Diploma in Education and postgraduate diplomas in special education. Both pathways are of equal status, and both lead to registration with SACE as a teacher. The qualifications achieved by following either path are recognised at Relative Education Qualification Value 14 level.

3.3.5 The Norms and Standards for Educators

The NSE and the Criteria for the Evaluation and Recognition of Qualifications for Employment in Education (2000), which is based on the norms and standards, have been amended and aligned with the HEQSF. The Norms and Standards policy document describes the changing role of educators in South Africa. "Norm" is derived from the word "normal" and refers to behaviour that is generally accepted in a society. "Standard" refers to the quality assurance process (Department of Education, 2000a).

The cornerstone of the Norms and Standards Policy for Educators (Department of Education, 2000a) is the notion of applied competence and its associated assessment criteria. This policy document has been revised and replaced by the National Policy Framework for Teacher Education and Development in South Africa (Department of Education, 2007). The seven roles and associated competences for teachers, described below, still provide the exit-level outcomes for teachers. The policy set out in the National Qualifications Framework Act of 2008 on the minimum requirements for teacher education qualifications aligns qualifications for teacher education with the Higher Education Qualifications Framework, 2007, and replaces the NSE in Schooling, 2000, in its entirety (Department of Higher Education and Training, 2011). The collective roles of teachers in a school are discussed in the Minimum Requirements for Teacher Education Qualifications (MRTEQ) (see section 3.3.6). The first role of the teacher is that of **learning mediator**. This requires the teacher to be sensitive to the diverse needs of learners, construct appropriate learning environments, demonstrate sound knowledge of the learning area or subject and – yes – be an inspiration to learners. Why "mediator"? A mediator is somebody who facilitates a dialogue, which makes it possible for an idea or feeling to be communicated. This critical role involves setting up a dialogue between the learner and various sources

of information, including the teacher, and ensuring that meaningful communication continues to take place between the two.

Second is that of **interpreter and designer of learning programmes and materials**. Teachers are expected to understand and interpret existing learning programmes, design their own learning programmes and select and prepare suitable textual and visual resources for learning. They also need to sequence and pace learning in a way that shows sensitivity to the needs of the learning area or subject and those of the learners. This role is perhaps the one that has been most misunderstood and abused. It has been used to justify the fact that Curriculum 2005 in its original form did not go far enough in specifying curriculum requirements on a grade-by-grade basis. Many bureaucrats argued that this did not present a problem because “each school should design its own learning programmes, based on the needs and concerns of the community”. It has become clear that most teachers and schools do not yet have the skills, resources or inclination to develop a customised curriculum, hence the reluctance to involve schools in the setting of curriculum standards. In the CAPS, learning programmes and in some instances work schedules are included in the documents. The role of the teacher is still that of interpreter, but with particular emphasis on lesson planning and effective implementation.

Another role to be fulfilled is that of a **leader**. Leadership skills that the teacher should display include managing learning in the classroom, carrying out classroom administrative duties efficiently and participating in school decision-making structures. All these functions require flexibility and should be carried out in a democratic way. Implicit in this role is the need to develop key habits of mind, which include perseverance, originality, strong self-esteem and the ability to manage frustration.

The fourth role is that of **scholar, researcher and lifelong learner**. Teachers are expected to pursue their own ongoing personal, academic, occupational and professional growth.

The fifth is the **community, citizenship and pastoral** role. This involves developing a sense of respect and responsibility towards others, upholding the Constitution and promoting democratic values and practices in schools. Learners must be provided with a supportive and empowering environment, including full information about HIV and AIDS. Essential to this role is the development of supportive relationships with parents and other key people and organisations in the community.

A sixth important role for a teacher is that of an **assessor**. Assessment is an essential feature of the teaching and learning process and should be integrated into learning on a continuous basis. Teachers must understand the various purposes of assessment, including identifying the needs of their learners, planning learning programmes, tracking learner progress, diagnosing problems and helping learners to improve their work, judging the effectiveness of the learning programme and assessing their own teaching. Teachers are expected to design and manage both formative and summative assessment and to keep detailed and diagnostic records of learner performance (Department of Basic Education, 2011a:49–50).

Finally, there is the role of **learning area / subject specialist**. To be considered a specialist in a field requires being well grounded in the knowledge, skills, values, principles, methods and procedures relevant to that field. It means knowing about

different approaches to teaching and learning and how these may be used in ways that are appropriate to the learners and their context.

3.3.6 Policy on Minimum Requirements for Teacher Education Qualifications

The Higher Education Quality Committee (HEQC) review resulted in the introduction of a new policy in 2011, the MRTEQ policy, which replaces the NSE and requires that all teacher education qualifications be revised to comply with MRTEQ's requirements by July 2014 (Department of Higher Education and Training, 2011 in Deacon, 2012). The MRTEQ policy

- directs universities to undertake better “professional **screening** of applicants prior to admission”, to be “more selective during admissions processes” and to “give more support once students have been admitted and are in the system” (Department of Higher Education and Training, 2011:6 in Deacon, 2012)
- specifies that, as of July 2014, all new teacher graduates will be expected to be able to teach in at least one official **language** and also be partly proficient (able to converse) in “at least *one* other official language (including South African Sign Language) *other than* English or Afrikaans” (Department of Higher Education and Training, 2011:16, in Deacon, 2012)
- attempts to moderate its minimum specifications for teacher education qualifications by providing for a degree of **flexibility** in order to avoid “fragmented”, “mechanical” and “mere lip-service” institutional responses; to encourage “teacher educators to become more involved in and engaged with curriculum design and policy implementation”; and to develop these as focused **research** areas, in this way linking their teaching to their research (Department of Higher Education and Training, 2011:6–7 in Deacon, 2012)
- insists that initial teacher education programmes demonstrate greater awareness of the challenges facing education in South Africa, by deliberately incorporating **situational and contextual elements** to help teachers deal better with diversity and transformation (Department of Higher Education and Training, 2011:7 in Deacon, 2012).

MRTEQ explicitly “provides clearer and more specific guidelines with regard to minimum requirements for the development of learning programmes” (Department of Higher Education and Training 2011:6 in Deacon, 2012). The required minimum allocation and distribution of credits in initial teacher education programmes lays particular emphasis on what is taught (subject or disciplinary content knowledge) and how it is taught (pedagogical content knowledge), as well as on practice teaching. MRTEQ specifies five “types of learning associated with the acquisition, integration and application of knowledge for teaching purposes”: disciplinary learning; pedagogical learning; practical learning; fundamental learning; and situational learning. Each of these is broken down further into the following subcomponents: educational foundations and disciplinary subject matter; general pedagogical knowledge and specialised pedagogical content knowledge; learning from and in practice;

languages, information technology (IT) and academic literacies; and learning, policy and social contexts (Department of Higher Education and Training, 2011:9–10 in Deacon, 2012).

MRTEQ also offers “direct and specific regulations with regard to practical and work-integrated learning structures, liaison, supervision and mentoring” (Department of Higher Education and Training, 2011:6 in Deacon, 2012). These regulations include an insistence on “proper supervision and suitable school placement” (Department of Higher Education and Training, 2011:16) and specifications of the minimum and maximum time to be devoted to practice teaching, including learning in and from practice. For the one-year Advanced Diploma in Teaching, MRTEQ stipulates that students spend between six and eight weeks on supervised school-based practice, while for the BEd degree the requirement is between 16 and 24 weeks over the four-year degree (Department of Higher Education and Training, 2011:25; 28 in Deacon, 2012).

While the seven educator / teacher roles are retained and reinterpreted as “functions carried out by the collective of teachers in a specific school”, the following list of basic competences serves as a description of what it means to be a **competent beginning teacher**. The following are the minimum competencies required of newly qualified teachers, who must

- have sound subject knowledge
- know how to teach their subject(s) and how to select, determine the sequence of and pace content in accordance with both subject and learner needs
- know who their learners are and how they learn; understand their individual needs and tailor their teaching accordingly
- know how to communicate effectively in general, as well as in relation to their subject(s), in order to mediate learning
- have highly developed literacy, numeracy and IT skills
- be knowledgeable about the school curriculum and be able to unpack its specialised content, as well as being able to use available resources appropriately, so as to plan and design suitable learning programmes
- understand diversity in the South African context in order to teach in a manner that includes all learners
- be able to identify learning or social problems and work in partnership with professional service providers to address these
- be able to manage classrooms effectively across diverse contexts in order to ensure an environment that is conducive to learning
- be able to assess learners in reliable and varied ways, as well as being able to use the results of assessment to improve teaching and learning
- have a positive work ethic, display appropriate values and conduct themselves in a manner that befits, enhances and develops the teaching profession
- be able to reflect critically, in theoretically informed ways and in conjunction with their professional community of colleagues, on their own practice in order to constantly improve it and adapt it to evolving circumstances (Department of Higher Education and Training, 2011:53; 55).

3.4 QUALITY MONITORING AND EVALUATION

The CHE, through its HEQC, is responsible for assuring the quality of all education qualifications offered by universities, while the Department of Basic Education maintains and applies its own criteria for the recognition and evaluation of qualifications for employment in public education (Department of Education, 2006a:24).

The Department of Basic Education is responsible for monitoring the performance of schools and teachers. For this purpose, a National Education Evaluation and Development Unit (NEEDU) was established in 2009, which reports directly to the Minister of Basic Education (Department of Basic Education, 2013). The ministerial committee that recommended the establishment of NEEDU believed that an authoritative, analytical and accurate account of the state of teaching and learning in schools in South Africa was needed. According to the *National Report 2012: Summary* (NEEDU, 2013), NEEDU is tasked with providing an independent account of the state of schools and the development needs of the school education system through a monitoring and evaluation system, and is also responsible for identifying the factors that inhibit or advance school improvement; making recommendations for redressing the problem areas that undermine school improvement; and proposing appropriate solutions to ensure that schools offer effective education for all learners. NEEDU's approach to systematic school evaluation therefore focuses on key elements such as the quality of teaching and learning, assessing the quality of curriculum delivery in schools and the quality of instructional leadership in the school system. The intention behind these investigations is to support teaching and learning practices and strengthen the capacities of teachers in the system.

3.4.1 The Integrated Quality Management System Policy

Teachers must constantly appraise themselves critically; reflecting on how they are teaching must be part of their daily routine. The National Department of Education issued policies that address the appraisal of teachers. This is a collective agreement (No. 8 of 2003 in the Education Labour Relations Council); that is, the employer (government) and employee (represented by teacher unions) have agreed to the policy. It is important for teachers to take note of this document.

The IQMS Policy combines the different quality management programmes that have been developed in the past into an integrated quality management system. This system includes

- development appraisal, which is the process whereby individual teachers are assessed to define areas of strength and weakness and to put systems in place for individual development
- performance management, which is the assessment of individual teachers to ascertain salary adjustments, appointment adjustments, promotions etc.
- whole-school evaluation, which evaluates the effectiveness of an entire school in respect of its teaching and learning.

The document is divided into three sections:

Section A describes the IQMS and why it needs to be used. It defines the structures that must be put in place in order to ensure the efficient running of the school. These structures are

- a senior management team (SMT)
- a staff development team (SDT)
- a development support group (DSG).

This section also states the guiding principles that inform the IQMS. The procedure to be followed is then outlined in six steps, stating very clearly how the whole process works. The section concludes with an outline of the roles and responsibilities of each of the school structures, i.e. the SMT, SDT and DSG.

Section B consists of an implementation plan. This is presented as a flow chart that details the procedure, culminating in the whole-school assessment. It specifies at what stage of the year each part of the process takes place and who is responsible; for example, the teachers must have a personal growth plan in place by the end of March. It gives a clear picture of the flow of information between the various stakeholders.

Section C consists of the assessment tool to be used in the various sections of the assessment process. Each assessment is rated on a four-level scale with a rubric that describes what must be achieved at each level. Forms that can be used to summarise the measurement and assessment of staff performance are provided.

The purpose of the IQMS is the personal development of each teacher. The entire document is available at <http://www.elrc.co.za>.

3.4.2 The implications of the Integrated Quality Management System Policy in relation to other policies

3.4.2.1 IQMS and CAPS

The first four performance standards in the IQMS instrument (creation of a positive learning environment; knowledge of curriculum and learning; programmes, lesson planning, preparation and presentation; and assessment) directly address the way the CAPS (also referred to as the amended NCS) should be implemented. The other standards (administration of resources and records; personnel; decision making and accountability; leadership; communication and serving the governing body; strategic planning; financial planning and education management and development) indicate how the implementation of the CAPS should be managed (Department of Education, 2004a). It is important to note that each subject has its own CAPS document. This is discussed further in [Chapter 4](#).

3.4.2.2 Assessment policy

The *Government Gazette* of 29 December 2009, No. 32836, contains an important statement:

Regular external systematic assessment of Mathematics, Home Language and English First Additional Language in Grades 3, 6 and 9. The National Curriculum and Assessment Policy (CAPS) documents for each subject in the GET Phase and each subject in the FET Phase are developed in the required policy format and were implemented from January 2011 (Department of Education, 2009).

It is important to note that the National Protocol for Assessment (Grades R–12) and the National Policy pertaining to the Programme and Promotion Requirements of the National Curriculum Statement Grades R–12 as implemented from 2011, should be read together with the CAPS documents for each subject, with particular attention to [Chapter 4](#).

3.4.2.3 Language policy

The Language in Education Policy is still being developed in a continuous process as part of the National Language Plan, which includes all sectors of society, including the Deaf community. The plan operates within the following paradigm:

- It is tasked, among other things, with promoting multilingualism, the development of the official languages and respect for all languages used in the country, including South African Sign Language.
- It is conceived as an integral and necessary part of the new government's strategy of building a non-racial nation in South Africa. It is meant to facilitate communication across the barriers of colour, language and religion.
- It assumes that learning more than one language should be general practice in our society, i.e. being multilingual should be a defining characteristic of South Africans.
- Its underlying principle is to maintain Home Language(s), while providing access to, and effective acquisition of, Additional Language(s).
- It invests the right to choose the language of learning and teaching in the individual.
- It assumes a fluid relationship between languages and culture.

The main aims of the Ministry of Education's Policy for Language in Education (Department of Education, 1997b) are to

- promote full participation in society and the economy through equitable and meaningful access to education
- pursue the language policy which best supports the general conceptual development of learners, and to establish multilingualism as an approach to language in education
- promote and develop all the official languages
- support teaching and learning of all languages required by learners or used by communities in South Africa, including languages used for religious purposes, languages that are important for international trade and communication, and

South African Sign Language, as well as alternative and augmentative communication

- counter disadvantages resulting from mismatches between home languages and languages of learning and teaching
- develop programmes for the redress of previously disadvantaged languages.

Guidelines for determining the learner's progress in languages stipulate the following:

1. In Grade 1 to Grade 3 promotion is based on adequate achievement in one official language at Home Language level (as indicated in the National Policy pertaining to the Programme and Promotion Requirements of the NCS Grades R–12:5, Department of Education, 1997b).
2. In grades 4 to 6 (Intermediate Phase) and grades 7 to 9 (Senior Phase), promotion is based on adequate achievement in one official language at Home Language level and moderate achievement in the second required official language at First Additional Language level (as indicated in the National Policy pertaining to the Programme and Promotion Requirements of the NCS Grades R–12:5, Department of Education, 1997b).
3. From Grade 10 to Grade 12 learners should achieve 40 per cent in in one official language at Home Language level and 30 per cent on the second required official language at First Additional Language level (as indicated in the National Policy pertaining to the Programme and Promotion Requirements of the NCS Grades R–12:21, Department of Education, 1997b).
4. Subject to national norms and standards as determined by the Minister of Education, the level of achievement required for promotion shall be determined by the provincial education departments.
5. The language(s) of learning and teaching in a public school must be (an) official language(s) (<http://www.education.gov.za>).

3.4.2.4 Education White Paper No. 6: Special Needs Education

Inclusive education

White Paper No. 6 (Department of Education, 2001a) defines inclusive education and training as

- acknowledging that all children and youth can learn and that all children and youth need support
- accepting and respecting the fact that all learners are different in some way and have different learning needs, which are equally valued
- enabling education structures, systems and learning methodologies to meet the needs of all learners
- acknowledging and respecting differences between children due to age, gender, ethnicity, language, class, disability, HIV status etc.

- being broader than formal schooling, and acknowledging that learning occurs in the home, the community, and within formal and informal modes and structures
- changing attitudes, behaviours, methodologies, curricula and environments to meet the needs of all children
- maximising the participation of all learners in the culture and the curriculum of educational institutions, and uncovering and minimising barriers to learning.

Inclusive education and training marks a shift from disability and deficit theories, assumptions, practices and models to an enabling and empowering educational approach. This new understanding of education accepts that learners have diverse needs, and that the system might be inadequate to respond to those needs. In other words, rather than seeing individual learners as being inadequate because they do not fit into the system, the emphasis is on examining the system itself and identifying the factors within the system that are not learner-friendly (Department of Education, 2001a).

What are “barriers to learning” and why is this a new approach?

Factors that can make it difficult to learn are called “barriers to learning and development”.

Barriers to learning that might emanate from the different characteristics of learners include

- physical, intellectual, sensory, neurological or developmental impairment
- psychosocial disturbances; differences in intellectual ability
- particular life experiences (socio-economic deprivation).

Barriers to learning that exist in the system itself could include

- negative attitudes to differences, stereotyping
- inadequately and inappropriately trained education managers and teachers
- non-recognition of and non-involvement in parents’ poverty.

Barriers to learning that exist within the broader social, economic and political environment include

- inadequate policies and legislation
- inflexible curricula
- inappropriate languages of learning and teaching
- inappropriate communication
- inappropriate and inadequate support services
- lack of or inappropriate transport
- inaccessible and unsafe structural environments.

It is obvious from the above that barriers to learning and development can be located within the learner, within the site of learning, within the education system itself and within the broader social, economic and political environment. Temporary barriers

can also arise during the learning process itself. Inclusive education and training is therefore about eliminating or overcoming these barriers, and the interventions needed vary from classroom interventions to wider system changes within schools, districts and departments of education.

Goals of White Paper 6: Special Needs Education

The goal of White Paper 6 (Department of Education, 2001a) is to build an inclusive education and training system. It aims to

- move away from using segregation according to categories of disability
- base the provision of education for learners with disabilities on the intensity of support needed
- place an emphasis on supporting learners through full-service schools, ordinary schools and resource centres
- indicate how learners with disabilities will be incorporated into special, full-service and ordinary schools in an incremental manner
- introduce strategies and interventions that will help teachers to cope with a diversity of learning and teaching needs
- provide clear direction about how current special schools will serve identified learners with disabilities and also serve as a resource to teachers.

Addressing barriers to learning

The NCS and CAPS set the same learning outcomes for all learners. This means the following:

- Schools must organise teaching and learning in such a way that all learners can achieve these outcomes.
- Any barriers to learning and development must be identified and understood so that learning and assessment can be adapted or modified appropriately.

Here we can talk of creating an enabling and supportive environment by changing the school ethos and teaching practice and by introducing a flexible curriculum. For this, no additional resources are needed.

Barriers to learning and development could fall in the following three categories:

- **System-related.** Examples are a lack of basic and appropriate learning support materials, a lack of teaching aids, inadequate facilities at schools and overcrowded classes.
- **Societal.** Examples are abject poverty and late enrolment at school.
- **Pedagogical.** Examples are inappropriate pedagogy, insufficient teachers and inappropriate and unfair procedures.

Barriers to learning also emerge from disabilities (neurological, physical, sensory, cognitive etc.). In most cases (if not all), the learning and development of the learner are hampered by a combination of two or more of these barriers.

Given that the main purpose of continuous assessment is to ensure that all learners access the curriculum, it is important that assessment tasks are developed and adapted in a way that ensures that barriers are overcome or removed early on. No intervention should be based simply on traditional categories of disability or learning difficulty. For example, not all learners who are blind or deaf, and not all learners who have physical or intellectual disabilities, experience the same barriers. Indeed, these learners should not experience any barriers at all.

The role of the teacher is to find out what kind of support a particular learner requires and how this could be accommodated in assessment procedures. For example, a learner who cannot see a picture and who cannot write can be given auditory help (e.g. CDs/DVDs) that will enable him or her to achieve the same outcome (Department of Education, 2000a; <http://www.education.gov.za>).

3.4.2.5 HIV and AIDS Policy

HIV and AIDS is one of the major challenges facing all South Africans. In South Africa, HIV is spread mainly through

- sexual contact
- breast-feeding
- mother-to-child transmission.

The HIV and AIDS Policy is in keeping with international standards; education law; the constitutional guarantees of the right to a basic education, the right not to be unfairly discriminated against, the right to life and bodily integrity, the right to privacy, the right to a safe environment; and the best interests of the child.

The purpose / intention of this policy (Department of Education, 1999) is to

- prevent the spread of HIV infection
- demystify HIV and AIDS
- calm fears
- reduce stigma
- instil non-discriminatory attitudes in people
- develop knowledge, skills, values and attitudes to encourage learners to adopt and maintain behaviour that will protect them from HIV infection and to support those infected and affected by HIV.

Education on HIV and AIDS is not to be seen as an add-on, but as part of the curriculum.

3.4.2.6 Manifesto on Values, Education and Democracy

The approach of the manifesto is founded on the idea that the Constitution expresses South Africans' shared aspirations and the moral and ethical direction they have set for the future. As a vision of a society based on equity, justice and freedom for all, it is less of a description of South Africa as it exists at present than a document that compels transformation. A priority for all education providers is, therefore, the

creation of a transformative, democratic, open learning system fostering a strong commitment to lifelong learning and development in all users.

The Constitution of the Republic of South Africa (Act 108 of 1996) (Republic of South Africa, 1996) provides the basis for curriculum transformation and development in contemporary South Africa. The Manifesto on Values, Education and Democracy (Department of Education, 2001b) identifies some of the fundamental values of the Constitution as

- democracy
- social justice and equity
- non-racism and non-sexism
- *ubuntu* (human dignity)
- an open society
- accountability (responsibility)
- respect
- the rule of law
- reconciliation.

The manifesto further identifies 16 strategies for familiarising young South Africans with the values of the Constitution. These strategies include

- nurturing a culture of communication and participation in school
- role modelling: promoting commitment as well as competence among teachers
- ensuring that every South African is able to read, write, count and think
- infusing the classroom with a culture of human rights
- making arts and culture part of the curriculum
- putting history back into the curriculum
- learning about the rich diversity of cultures, beliefs and world views within which the unity of South Africa is manifested
- encouraging multilingualism
- using sport to shape social bonds and nurture nation-building at schools
- ensuring equal access to education
- promoting anti-racism in schools
- freeing the potential of girls as well as boys
- dealing with HIV and AIDS and nurturing a culture of sexual and social responsibility
- making schools safe to learn and teach in and ensuring the rule of law
- promoting ethics and the environment
- nurturing the new patriotism, or affirming a common citizenship (Department of Education, 2001b).

The NCS sought to embody these values in the knowledge and skills it developed (Department of Education, 2002b). These principles are still important in the CAPS.

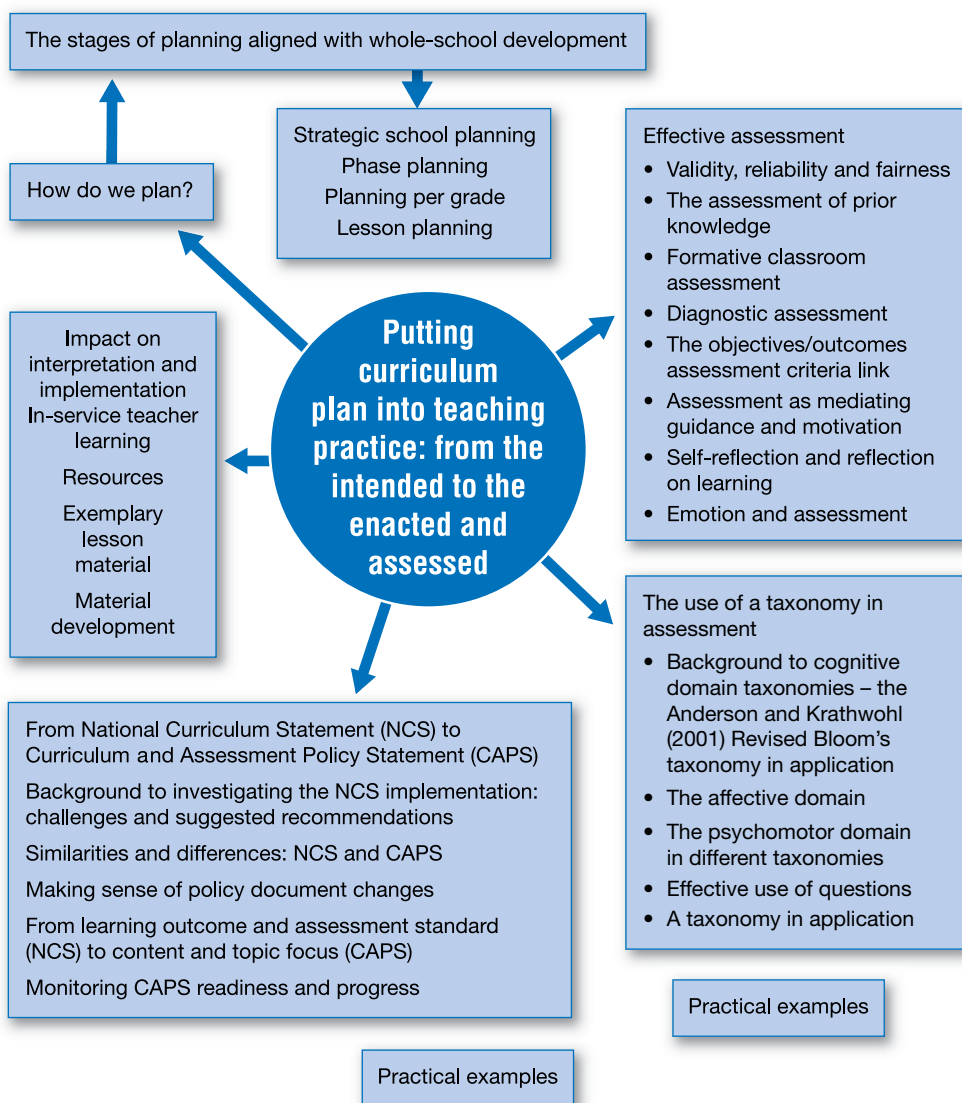
These principles are the basis of the design features (structure) of the NCS documents. As such, they must also be the basis of interpreting, planning and implementing the curriculum. The changes from the NCS to CAPS are discussed in more detail in [Chapter 4](#). A list of policy documents and web addresses appears in the [Bibliography](#).

3.5 CONCLUSION

South African policy pertaining to teachers, including the seven roles of the teacher, provides important guidelines to use in curriculum interpretation and implementation. This chapter discussed and compared official documents to help teachers understand the NQF and its sub-frameworks, the role of SACE as professional council and what is expected in terms of development and standards of each teacher. It is important for the teacher to take note of the minimum requirements for teacher education qualifications. Teachers also need to consider what the implications of the IQMS are in relation to the CAPS and other policies when planning. This chapter highlighted the control by government to decide on national curriculum and that curriculum change and review emphasised the transformation process in South Africa. [Chapter 4](#) provides guidance on putting curriculum plans into teaching practice.

Putting the curriculum plan into teaching practice: from the intended to the enacted and assessed

CHAPTER 4



4.1 INTRODUCTION

In the previous chapters, we looked at different development approaches that affect the quality of a curriculum. There are different ways in which people assess a curriculum and many aspects to consider: Does it teach relevant things? Does it lead to adequate results in national assessments and examinations? Does it allow learners to achieve to their full potential? Does it enable a smooth transition to subsequent educational levels? Does it prepare learners effectively for the job market? The dimensions discussed in [Chapter 1](#) and mentioned by Nieveen (1999; 2009 in Thijs & Van den Akker 2009:41) – namely relevance, consistency, practicality, a logical, coherent structure and effectiveness – should also be considered.

From the discussions in [Chapter 1](#), it is clear that the quality criteria more or less build on one another, but it should also be stressed that a curriculum's effectiveness depends on practicality – can it be implemented as intended? Its effectiveness also depends a great deal on how it is interpreted and implemented and on the role of the teacher in implementing it.

In this chapter, we provide guidance on putting curriculum theory into teaching practice. We look at the practical competences required of the teacher: to demonstrate the ability, in an authentic context, to consider a range of possibilities for action; to make considered decisions about which option to follow; and to perform the chosen action by

- interpreting and adapting planning for teaching to ensure it is applied appropriately in the context in which teaching will occur (refer to [chapters 1 and 2](#))
- designing teaching and choosing teaching strategies that meet the desired outcomes and are appropriate for the context in which they occur (refer to [Chapter 2](#))
- using policy documents from the departments of education (refer to [Chapter 3](#))
- adapting and/or selecting learning resources that are appropriate for the age, language competence, culture and gender of learning groups or learners.

4.2 TOWARDS THE IMPLEMENTATION OF THE CURRICULUM

With regard to the background discussion in [Chapter 1](#) and the importance of the aims and content of learning, it should be acknowledged that changes to aims and content also presuppose changes to many other aspects of the plan for learning and teaching (Van den Akker, 2003).

As discussed in [Chapter 1](#), the aspects of curriculum design mentioned below should be kept in mind when working with the curriculum, and interpreting and planning an instructional design. Thijs and Van den Akker (2009:12) suggest questions that could guide the interpretation of a curriculum ([Table 4.1](#)).

The process of interpreting and implementing the curriculum is actually curriculum development “in reverse”. As mentioned in [Chapter 1](#), [Section 1.2.2](#), working with a curriculum is a cyclic process of design in which context analysis, planning, development, implementation and evaluation take place interactively.

Table 4.1 Questions to guide interpretation of a curriculum

Curriculum design / component	Questions
Rationale	Why do the learners have to learn?
Aims and objectives	What are the goals of their learning?
Content	What do they learn?
Learning activities	How do they learn?
Teacher's role	How does the teacher facilitate learning?
Materials and resources	With what do learners learn?
Grouping	With whom do they learn?
Location	Where do they learn?
Time	In what time frame should learning take place?
Assessment	How should learning be assessed?

It is therefore important that teachers ask about the sociopolitical view of the learning to be undertaken (rationale): for example, will the learner be an active co-creator and participant in the classroom and beyond, or will he or she be trained to be biddable, respectful and unquestioning? Other questions about what, how and where the learners should learn, and the role of the teacher and learner, should also be asked. In addition, teachers should think about how the answers will impact on the interpretation and implementation of the curriculum and the way lesson planning is approached.

4.3 CURRICULUM IMPLEMENTATION IN THE SOUTH AFRICAN CONTEXT

4.3.1 The relationship between whole-school development planning and curriculum interpretation and implementation

Whole-school development planning may be defined as a process in which all the stakeholders in the school consider all the activities and interests of the school and then decide on the goals for their school over a certain period of time.

Planning how teaching and learning should take place should be linked to the whole-school development plan. This is because the curriculum is the core business of the school and its implementation must inform the vision and mission of the school, how the budget is allocated and spent, and the skills and competencies needed in the professional staff.

Whole-school planning can be more simply defined as the process of making sure the school is ready for the learner, rather than the learner having to be ready for the school. The learner should be viewed as an individual who comes into the school and the classroom with a great deal of experience; the learners' different contexts should be therefore be considered and the school should be able to apply them in the

learning situation to ensure that teaching and learning are appropriate to the needs of the community, school and classroom. (See [Chapter 2](#) for how a school goes about taking into account the broader context from which the learner comes.)

For effective teaching and learning to take place, it is important that the school's vision, mission and approach are in line with the teachers' commitment, abilities and willingness to change, and the culture and infrastructure of the school. In practice, this is a complex endeavour (Nieveen & Paus, 2009). Tasks that might enhance curriculum interpretation and implementation when following a whole-school development approach are as follows:

- Establish teaching teams per phase.
- Assist teaching teams (per phase) to analyse current practice, as teachers do not always have a clear view of the educational practice of colleagues and the design of education as a whole.
- Find common ground: analysing and discussing the existing curriculum often leads to further collaboration and suggestions for strengthening cohesion. Collaboration often starts with practical concerns (e.g. how topics can be combined and how they fit with the timetable) rather than programmatic concerns (e.g. how topics fit with the development line of the learner and the overall programme).
- Develop horizontal cohesion: strengthen cohesion between subjects by developing cross-curricular themes and projects, or by developing broad learning areas comprising different subjects.
- Develop vertical cohesion: in order to develop a continuous learning trajectory throughout the school years, teachers should be familiar not only with the years in which they are active, but also with the years preceding and following these.
- Focus on skills development that maintains, combines, refines, transfers or generalises existing skills. It might also involve reactivating skills that have been acquired previously. All skills and experiences that learners bring to the learning process must be considered valuable.
- Focus on curricular content that extends learners' access to new areas of experience, knowledge and/or understanding, based on their current strengths and learning needs. What is taught should also be flexible and relevant to the lived reality of the large majority of learners.
- Acknowledge learning contexts to support the learning process. Learners can be offered a variety of activities, resources and environments that are appropriate to their age, interests, strengths, prior knowledge and achievements. Learning can also happen through a variety of activities outside the school, such as projects, work experiences and volunteering. These contexts, as well as the resources used, should make specific provision for learners with disabilities.
- Widen teaching approaches by accommodating learners' individual strengths and learning styles at different stages by using appropriate learning and teaching support materials.

- Include shared learning, which is about providing opportunities for learners' participation in the learning process (e.g. in planning or in assessment). Furthermore, assessment should take into account the content and level to which learners have been exposed, and should use alternative methods to accommodate learners' needs (based on the different barriers to learning and development).
- Recognise that the language of learning and teaching (LoLT) must be accessible to learners.
- Encourage and value the participation and involvement of caregivers and families.

4.3.2 Stages of planning for curriculum interpretation and implementation

With whole-school development in mind and working towards the holistic development of the learner, there are four key stages (Figure 4.1) of planning:

1. Strategic school planning
2. Phase planning
3. Planning per grade
4. Lesson planning

4.3.2.1 Strategic planning in a school

Before planning for the school year, the school management team and the professional staff should identify the curricular strengths, weaknesses, opportunities and threats (SWOT) in the school. From this SWOT analysis, it should be possible to see at a glance what the teacher should focus on with learners in a particular phase. We have given a very simple example in Table 4.2.

Table 4.2 SWOT assessment of a school

Strengths (Internal)	Weaknesses (Internal)
Good work ethic in learners Willingness to learn Majority of learners have progressed with age cohort Teachers have received extensive curriculum training on the most recent curriculum Strong school governing body that supports curriculum innovation	Literacy for Grade 6 – learners need to have access to and read more texts Life skills for Grade 6 and 7 learners The majority of learners are not learning in their home language Poor involvement and attitude of parents towards the school Lack of good facilities
Threats (External)	Opportunities (External)
There is some movement of staff since promotional posts have been advertised Poaching of learners by other schools in the area Influx of drugs Deterioration of moral values	Parents in the community are willing to help raise funds for the school library Multicultural schools – prepare learners for the real world Find ways to accommodate disabled learners at school

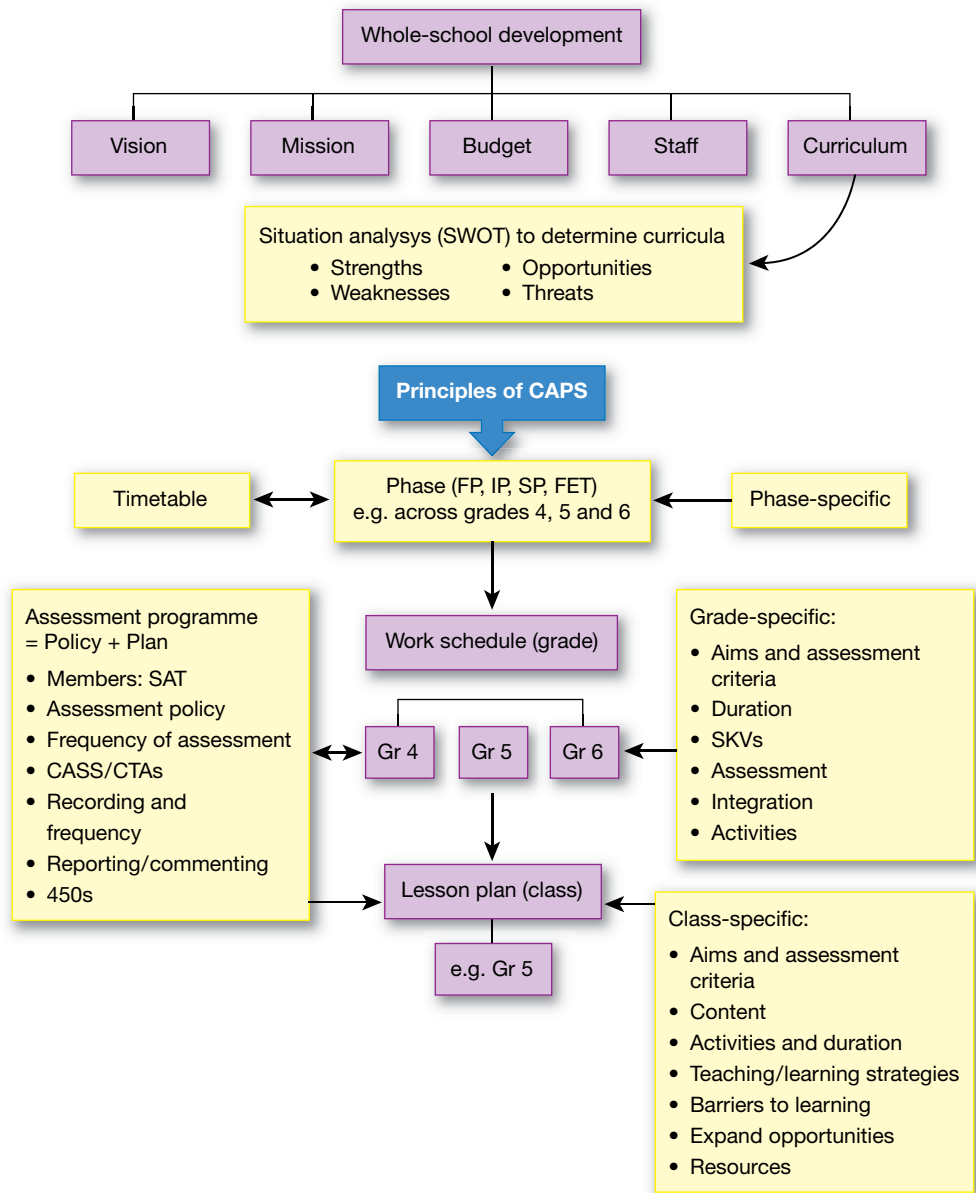


Figure 4.1 The four stages of planning in relation to each other

After discussing the SWOT analysis, the academic staff will select what they consider important content for learners in the next academic year. Teachers in a phase will negotiate with teachers in other phases and, on the basis of this negotiation, will select what they want to focus on. To determine their choices, they will consider both the context from which the learner comes and the context in which the school is situated.

This process of selection and negotiation in the community / local / school context (environment) should also be informed by other stakeholders. Learners may have ideas about what is relevant to their learning, particularly in the secondary school, and so may parents and the broader community. For example, the academic staff decide that, in the Life Orientation programme, they will develop a theme for Grade 7 learners on “Being 13” that explores issues of sexuality, including HIV and AIDS. They consult parents on the issue and also enlist the support of church leaders in the community. An added dimension of the theme is a charity drive to support the local Cotlands Baby Centre, which cares for babies and young children with HIV and AIDS.

To deal with the literacy issue, staff decide to integrate a literacy component into the planning, but because the majority of learners come from an environment that does not have access to printed materials they will have to find innovative ways of providing resources. The Intermediate Phase parents have volunteered to raise funds to buy additional books for the school library. In addition, the teachers have decided to hold a competition in the school to get learners to read more.

“Safety in the home and at school” is another example of a theme, this time in Life Orientation, which can be chosen because of the incidence of crime in the area. The school might decide to work with the local Community Policing Forum and Adopt-a-Cop from the local police station.

While the broader context will help teachers to make selections based upon identified needs and relevance to the learner, they cannot ignore the conceptual progression in each of the subjects.

4.3.2.2 Phase planning

The implementation of the curriculum must be a phase-long process of planning, managing and organising classroom practice. This means that what is planned must guide and inform what is done in the classroom – all teaching, learning and assessment.

What must teachers keep in mind in each phase?

In the Foundation Phase (Grade R–3), the following subjects are offered: Home Language, First Additional Language, Mathematics and Life Skills. The latter includes Beginning Knowledge, Creative Arts, Physical Education and Personal and Social Well-being. In the Intermediate Phase (Grade 4–6), the subjects are Home Language, First Additional Language, Mathematics, Natural Sciences and Technology, Social Sciences and Life Skills.

In the Senior Phase (Grade 7–9) there are nine subjects, namely Home Language, First Additional Language, Mathematics, Natural Sciences, Social Sciences, Technology, Economic Management Sciences, Life Orientation and Creative Arts. Schools may offer more subjects if they want to.

In the Further Education and Training (FET) Phase (Grade 10–12) there are four compulsory (fundamental) subjects (Home Language, First Additional Language, Mathematics / Mathematical Literacy and Life Orientation) and three electives. Schools may offer more subjects and learners may choose more subjects (Department of Education, 2002b; 2011).

The following aspects are important when planning for a specific phase:

- Contexts/themes within which the teaching, learning and assessment will occur
- Principles of the Curriculum Assessment Policy Statement (CAPS) that must be incorporated in all teaching, learning and assessment
- Aims and assessment criteria across the phase
- The sequencing (conceptual progression) of the aims and assessment criteria
- The core knowledge and concepts that will be used to attain the learning outcomes/aims and assessment criteria for the phase. These should reflect the context of the community, school and classroom to ensure that the teaching and learning are appropriate for the learners' needs
- How progression (increasing conceptual complexity) will occur within subjects and from grade to grade, bearing in mind integration across different subjects and real-life application
- The time allocation and weighting given to learning in the subject per phase (time frames for all teaching, learning and assessment)

Phase planning implies that all teachers in a phase should work together to create a clear plan of how they will guide learners through that phase for a particular subject. Individual planning is not advisable, because **all** teachers must ensure that learners achieve the national learning outcomes by the time they leave the phase (exit points are at the end of Grades 3, 6, 9 and 12). Teachers must be involved in different levels of planning, each level serving a different purpose and involving a different level of detail.

Every teacher remains an individual and the methods used in the classrooms may differ, though all might be equally effective in ensuring that the learners achieve the aims.

Planning takes place across a phase (three grades). The organising tool for a phase comes from both the CAPS documents and the characteristics of the learner in this age group. The teacher should refer to the Teacher's Guide and CAPS documents for the subject and familiarise him- or herself with the characteristics that make the learners in a particular phase distinct from those in another. This is important, since learners are clearly at different developmental levels in different phases. As teachers gain experience, they will find it easier to work with developmental levels and the characteristics of each. However, for new teachers, it is advisable to read up on the developmental level(s) the typical learner will have reached.

4.3.2.3 Across-grade / year planning

The year's work for each grade in a phase must also be planned. The work schedule for each subject is based on the CAPS and develops in terms of the sequencing, context, and core knowledge and concepts at each level.

Though in many instances work schedules are already included in the CAPS documents, teachers responsible for implementing the curriculum in a particular grade will have to work with the realities of school and learner context when planning for each term and year.

4.3.2.4 Lesson plans

Individual teachers have to plan lessons for each grade based on the topics in the curriculum and ensure that they plan for the particular learners in their class(es); there must be learning outcomes/aims for each lesson. Examples are given in Figure 4.4.

4.4 IN-SERVICE TEACHER LEARNING: WHAT AND HOW?

Enhancing curriculum interpretation and implementation implies changes in the way teachers act and think, which in turn involves an in-service learning process. Changes are needed in three dimensions:

- Using different/new teaching materials
- Adopting and demonstrating different behaviour, in a didactical, pedagogical and organisational sense, and the resulting “unlearning” of existing roles and routines
- Changing views and attitudes about the profession and the roles of learners and teachers (Fullan, 2007).

But first and foremost, the changes have implications for the teachers’ pedagogical content knowledge and skills, as re-orientation to and reinforcement of pedagogical content knowledge are considered the keys to more effective curriculum implementation (Van Driel, 2008).

An important difference between the learning of teachers and the learning of learners is that teachers have an extensive and greatly varied set of experiences. Such experiences may form a favourable starting point and frame of reference for new in-service learning experiences, but the opposite may also be true. If the new information is inconsistent with the teachers’ existing frame of reference, this may lead to them feeling insecure and even rejecting the information.

An important similarity, on the other hand, is that a number of socio-constructivist principles that apply to the learning of learners also seem to apply to the learning of teachers. In this context, prominent sources (see Borko, 2004; Bransford, Brown & Cocking, 2000; Darling-Hammond & Bransford, 2005, and others) point out the importance of

- stimulating active construction of meaning by (re)designing, experimenting, and reflecting
- aiming for the zone of proximal development
- stimulating interaction and collaboration, for example by forming teams in an attempt to break through the barriers of isolation.

4.4.1 The teacher, resources and lesson materials

Curricular products that are developed at micro-level include lesson materials and resources.

Different subjects and curricula rely on different resources for their success. Teachers will have to be familiar with the resources needed and the resources avail-

able as they interpret the curriculum and plan instructional designs. Teachers must also be sensitive to the limitations of learners who experience barriers to learning, and how their progress may be affected by the availability (or otherwise) of resources or a lack of access to resources. If learners do not have access to resources, the school and the teachers need to find creative ways to get around this. The school must be ready for the learner rather than the learner being ready for the school. Barriers to learning must be overcome, so they do not have a negative impact upon the learners.

While teachers may rely on a textbook, they should also develop lessons that use other media, for example playing and discussing the influences on a piece of classical music that was written during the French Revolution. Alternatively, learners could be asked to use the internet and/or a library to research a particular topic/theme.

When using any learning and teaching support material (textbooks are only one type of material), it is advisable to evaluate the materials before buying them to see if they are suitable.

Teachers and schools make their own selections from the range of available educational materials; therefore the choice of lesson materials and resources is informal and non-compulsory. Teaching materials, in the form of printed and/or digital resources published by educational publishers, can be a convenient, efficient and often indispensable tool to support day-to-day teaching. However, convenience and efficiency have a downside: teachers can depend excessively on these materials. This phenomenon of “textbook teaching” may hinder rather than foster effective curriculum interpretation and implementation (Thijs & Van den Akker, 2009).

Learning resources can be regarded as the carriers of the curriculum. They thus form an ideal vehicle to make the generic implementation intentions in teaching practice explicit. This is often done by means of exemplary lesson material, which is developed to illustrate the intended implementation of curriculum content in a certain subject or subject cluster at microlevel (i.e. at group, class or teacher level). The development of these materials often starts from a basic vision (an “ideal” curriculum, whether or not it is specified in a vision document) that is related to the generic curricular framework. This exemplary interpretation may also reveal a need to further fine-tune the planners’ vision, ambitions and curricular frameworks. In the end, exemplary lesson materials aim to provide a source of inspiration for various target groups, such as educational publishers, in developing new methods and modifying existing ones. The materials can also be used when working with student teachers to give them orientation and practice.

The central question in this section is how (exemplary) lesson material may help teachers to familiarise themselves with the implementation of the intended curriculum, based on the obvious fact that the teacher-curriculum combination is an important factor in stimulating the quality of learning. In addition, (exemplary) lesson materials are an important variable in the teaching and learning process; such materials are important carriers of a teacher’s intention to effectively implement (enact) the curriculum. For these materials to fulfil their catalytic function, they should be specifically developed to allow teachers to adapt them, doing which will be a learning experience in itself. According to Ball and Cohen (1996) and Davis and Krajcik (2005), such educative materials can provide a bridge between the

content-specific, pedagogical and organisational challenges entailed in a curriculum proposal and desirable in-service learning of teachers.

4.4.2 Exemplary lesson materials and teacher development

Over the past two decades, a large knowledge base has been developed covering the primary functions and effective features of exemplary lesson materials, particularly on the basis of studies by the School of Education of the University of Michigan (Ball & Cohen, 1996; Davis & Krajcik, 2005) and the Department of Curriculum Design and Educational Innovation of the University of Twente in the Netherlands (the starting point is marked by Van den Akker, 1988).

According to these studies, materials should first and foremost focus on elements that are essential for the effective interpretation and implementation of the curriculum; but at the same time, such materials should be considered vulnerable because of their possible complexity or lack of clarity. Reasons for using exemplary lesson materials include

- offering an indication of what can be expected during lessons
- stimulating internal dialogue and reflection on questions such as: “How does the material relate to my personal opinions and my own teaching practice? Can the material be used for preparing and teaching lessons and if so, how? What reactions and learning outcomes from learners can be expected?”
- presenting specific guidelines for use in practice
- preventing early watering down of the intended new approach to content and pedagogy and, at the same time, stimulating local adaptation and ownership of the new approach
- providing a basis for the exchange of experiences, feedback, discussion and reflection
- stimulating teachers to (re)design their own materials and/or to make a more selective, creative and conscious use of existing textbooks and materials.

The teacher should keep the following in mind when choosing lesson materials that can lead to effective implementation of the curriculum:

- The material has a modular and flexible design and structure.
- The material raises questions about essential yet vulnerable aspects of lesson preparation, subject matter content, the role of the teacher and the nature of assessments and tests.
- The material displays a balance between providing concrete suggestions and procedural specifications on the one hand (including some justification for choices made), while avoiding exhaustive regulations on the other. This will stimulate active adaptation.

At the same time, concrete and specified guidelines are necessary – especially in the early stages of implementation – in order to actively support teachers in gaining

experience, which will combat feelings of insecurity and avoid premature modifications in planning and instructional design.

An important lesson is that no matter how carefully they are designed and tested, using exemplary lesson materials alone has its limitations. Such materials have proven more effective if applied in combination with more comprehensive professional development schemes for teachers. These development schemes contain activities that will stimulate collaboration with and coaching by experts and colleagues, for example the exchange of experiences, collegial feedback and reflection-in-action and reflection-on-action, focused on the users' experiences with the material. In such "blended scenarios" virtual teacher networks may also play a role. Multimedia cases with visualisations of the envisaged teaching practice also have an added value (Van den Berg, Blijleven & Jansen, 2003).

However, it is clear that the teaching of teachers, in-service development and the choice and application of exemplary lesson material should not be seen as a shortcut in planning, instructional design and ways of interpreting and implementing the curriculum. On the contrary, further in-service teacher development requires time, should be embedded in whole-school development, and should enjoy the support of the school management and the government.

When developing lesson material, teachers should acknowledge the iterative cycle of analysis, design, development, and evaluation in working with the curriculum. The following aspects of material design should be kept in mind:

- The first step is to determine the functions and features of the materials to be developed. This is done on the basis of a thorough analysis of literature, context and the needs of the target group.
- Testing the effectiveness of the lesson material might include observations of lesson preparation and implementation, as well as interviews, in order to gain insight into teachers' and learners' experiences.
- The teacher draws on the experience of subject / phase experts who have developed teaching material of high quality in terms of relevance, consistency, practicality and effectiveness. Doing this contributes to the professional development of teachers, and extends their knowledge of material design.

Teachers should assess the expected practicality and effectiveness of teaching materials; however, this can only be done when teachers and learners have used the new materials in the learning situation.

4.5 TOWARDS EFFECTIVE ASSESSMENT OF THE INTENDED CURRICULUM

When interpreting and implementing the curriculum, the following questions should also be asked from the outset.

- **Which** assessment **technique** is the best for measuring the required outcomes / aims? Is it, for instance, a research project, or a written assignment?

- **How** will a research project or an assignment be assessed? Will we use an observation sheet with assessment criteria, or a rubric? These are the **tools** of assessment; the tool selected should be appropriate to the assessment criteria for the activity.
- **Who** will be doing the assessing? Will it be group assessment, self-assessment or peer assessment? These are possible **methods** of assessment.

Walvoord (2004:2–5) and Lambert and Lines (2000:4) define the assessment process as the systematic collection of information about the learner's learning, using the time, knowledge, expertise and resources available in order to inform decisions about how to improve learning. Assessment must be more than gathering evidence of how well the learners have achieved objectives / outcomes; it should also be used to improve the planning for teaching and learning in the next cycle. In this instance the improvement should be not only in the learners' learning but also in the assessment process, and the teacher should be able to adapt the planning for more effective teaching. It is important to find and introduce ways to plan and teach that encourage and promote the diagnostic characteristics of assessment, namely its use for guidance and motivation.

The process of gaining and assessing knowledge is one of creating and illustrating one's own understanding. Assessment must be an organic part of teaching and learning. Making connections between teaching, learning and assessment encourages a holistic approach to the analysis of assessment and its impact on the teaching-learning process. In order to create a cohesive relationship between teaching, learning and assessment, learners need to construct their own knowledge networks and the teacher must monitor this knowledge construction. The teacher can determine the level of knowledge construction by assessing prior information, the acquisition of new information and the transformation, and the elaboration and organisation of such new information.

Components that are essential in assessing a learner's individual ability and needs include a set of objectives / outcomes and criteria; the use of close-to-reality contexts; ideas about individual formative feedback; and fostering the ability for self-assessment through a mediation process (Black, Harrison, Lee, Marshall & Wiliam, 2003:30–57).

4.5.1 Validity, reliability and fairness in assessment

Although Lambert and Lines (2000:4; 7) identify a formative, summative and certification role for assessment, they make it clear that however assessment is used, it is vital that it provides correct information about the learner, which they refer to as “confidence in the result”. Although validity and reliability in assessment are two separate concepts, they are closely interconnected. For this reason, the discussion to follow deals with both concepts.

Any consideration of how to assess learners equitably should also include questions about what abilities learners require in order to demonstrate knowledge of and skills pertaining to particular learning outcomes. Besides the required skills,

one can argue that in order for assessment to be valid, the learner as an individual in a particular social setting and context should be kept in mind. According to Killen (2007:333), such individualised assessment practice allows the teacher to make more informed decisions on what to teach and how to reduce the inequalities which may appear in the assessment process.

Validity refers not only to how assessment results are used, but also to the planning and intention of the assessment in order to make it constructive. This planning includes acknowledging the learner, who must achieve certain learning targets and outcomes in a particular context. For the sake of validity, the teacher should also ensure that the assessment tasks reflect the relevance and extent of the content, as well as the level at which it was covered.

If validity is defined as the extent to which an assessment task assesses what it is intended to assess or measure, the ways in which the context, learner abilities, culture, prior knowledge and existing knowledge frameworks are taken into consideration will influence the validity of the intended assessment a great deal.

Fairness in assessment – with the main focus on equity (fairness and justice), rather than equality (equal opportunity) – allows for differences in the learners' backgrounds (which could include cultural heritage, language proficiency, interests, prior knowledge and learning styles) to be acknowledged in assessment practices. This approach uses different kinds of assessment to assess abilities. This may mean, for instance, that the quality of expression in a response may be ignored when language skills per se are not being assessed. Equity implies that every learner must have an opportunity to learn the important knowledge and skills that are assessed, and that learners cannot be assessed fairly on content that they have not had the opportunity to learn; such assessment will be neither fair nor valid. Assessment that is unfair or biased will be inaccurate and therefore not reliable enough to consistently result in comparable levels of performance.

4.5.2 The assessment of prior knowledge

Effective assessment consciously acknowledges prior knowledge, which means that the teacher uses learners' existing cognitive structures to help them make sense of new learning. Learners synthesise new experiences with previous experiences and understanding; activating prior knowledge increases comprehension. If, for instance, learners cannot read, three major instructional interventions must be considered in order for these learners to successfully complete a task requiring reading. The interventions include teaching vocabulary as a pre-reading step and providing examples to introduce a conceptual framework. This will enable the learners to build an appropriate background for themselves. For a learner to make sense of learning experiences, comprehension is a major factor and prior knowledge is an essential element in the quest for making meaning.

It is essential for the teacher to establish the level of learners' prior knowledge, using effective questioning, in order to align assessment tasks appropriately. The challenge all teachers face is to determine what kind of questions to ask to establish the learners' level of understanding – questions that will also reveal why learners have misconceptions and misunderstandings about particular concepts.

In new learning situations, learners are confronted with new perceptions, concepts and data that they interpret in relation to a set of rules or existing understanding (prior knowledge) in order to generate new understanding. Learners may use existing attitudes, experiences, skills and knowledge to construct meaning from new content in order to demonstrate their understanding in an assessment task.

4.5.3 The focus on formative classroom assessment

It is imperative to clarify what formative assessment is. To some, “formative” implies collecting marks from homework tasks and from class tests, as opposed to marks from formal testing; this creates the misconception that formative assessment is frequent informal testing. Black et al. (2003:122) clarify this misunderstanding by defining formative assessment as a **process**, one in which information about learning is **evoked** and then used to **modify** teaching and learning activities.

Black and William (1998a:139–148) refer to assessment as all the activities undertaken by teachers and learners in assessing themselves; these activities provide feedback that is used to modify the teaching and learning activities in which they are engaged. Assessment becomes “formative assessment” when the evidence is **used to adapt the teaching in order to meet the needs**. This evidence can be gained in a wide variety of ways, from the puzzled look on a learner’s face to an analysis of a learner’s response to a formal test. It is crucial that the teacher is able to use the evidence to guide the learner to improved understanding, improve the quality of teaching and increase the efficacy of assessment.

It is important to acknowledge that classroom assessment should promote learning, because learning should be the core activity in the teaching-learning environment. The tendency to assign grades and only reward a mark results in assessment being used more for summative purposes. The purpose of summative assessment is to summarise learning and the level of development after a period of work by assigning a score to answers in a test. If the focus is more on teaching, guiding and supporting learning, formative purposes of assessment are emphasised.

To get to grips with formative assessment and steer away from using summative assessment only, teachers firstly need to use formative practices to support revision and develop more effective reviewing strategies by providing constructive feedback. Secondly, teachers must involve learners in the assessment process. This encourages a teacher to view him- or herself not only as a grader and evaluator, but also as a mediator of knowledge and skills and a supporter and guide in formative assessment practices in particular. For instance, as soon as learners set questions and have to think about what makes a good question, they realise what they need to gain in order to have a deeper understanding of the subject material. An assessment process can be changed from a grading exercise to a reviewing, self-reflecting and mediating process, and this will impact on the understanding of both teacher and learner. Through this involvement, teachers can gain a much better understanding of how to involve learners in revision so that they do not just passively revise some subject content they already know. Another enriching exercise is to answer questions set by other learners, which helps create a new understanding of good questions and how to use them to improve knowledge and understanding of the subject content.

4.5.4 Diagnostic assessment – a starting point for further planning

Diagnostic assessment measures a learner's current knowledge and skills, but also gives the teacher an understanding of the existing knowledge and skills a learner brings to the teaching-learning environment. Any problems identified in the assessment indicate that further planning, and adapting and modifying the teaching of content and concepts are needed (Leighton & Gierl, 2007:3).

Diagnostic assessment should be clearly linked to predetermined learning objectives/outcomes in order to help the learner in the learning process. This means that learners should understand **why** and **how** they are going to be assessed. Furthermore, diagnostic assessment may be used to assess key skills that are taught in the curriculum or key skills of a more basic or absolute nature, which the curriculum is expected to develop.

Diagnostic assessment is conducted prior to and during teaching and learning, not only to determine what existing knowledge, skills, attitudes, interests and/or needs the learner has, but to identify the range of **individual differences** and then to modify the teaching to meet the needs of individuals or even groups of learners.

4.5.5 Assessment for diagnostic and formative purposes

The use of assessment as a diagnostic tool enables the teacher to adjust teaching to suit the learner's current level of understanding; to identify any misunderstandings the learner has about particular concepts; and to discover if the learner lacks a particular skill on which he or she needs to improve understanding. The results of diagnostic assessment indicate how planning for teaching and assessment should provide answers to the "why", "what" and "how" questions of assessment. Therefore the teacher's explanation of the reasons for particular assessment tasks and the content and level of questioning associated with them is of core significance. This also implies that the teacher will find content specification ("what") for particular tasks easier and that the format ("how") in which the assessment will be conducted becomes clear. Improving the effectiveness of assessment for diagnostic purposes means ensuring that the learners clearly understand the task requirements; if not, the teacher will not be able to clearly identify and pinpoint problem areas. The dual aim of diagnostic assessment is for teacher and learner to establish what they already know, what they want to and must know and do, and how it can be shown that the content and skills have been mastered.

A variety of tasks that identify where and with which particular content the learners are struggling can guide the teacher in choosing teaching strategies, or changing a teaching strategy used in a particular situation to achieve more constructive and effective teaching and learning.

Research has shown that learners cannot gain any insight in their progress when they are only given marks or grades. The worst scenario is one in which some learners get low marks this time, they got low marks last time, they expect to get low marks next time, and they and their teacher accept that they are just not smart enough to do better. Thus, methods of reporting test results to learners that help the learners identify their own strengths and weaknesses are critical. Learners must be

given the means and opportunities to work with evidence of their difficulties. Thus, for formative purposes, a test at the end of a block or module of teaching is pointless because it is done too late to work with the results.

4.5.6 The link between objectives / outcomes and assessment criteria in assessment practice

Fair assessment also means ensuring that planning, teaching and assessment start with a clear set of objectives/outcomes. Aligning assessment tasks with the objectives/outcomes will ensure that the teacher only assesses what has been defined. The teacher's assessment may examine the learner's ability to use explanatory concepts creatively, to think logically, to tackle new problems or to re-interpret objective knowledge. This means that the teacher has to define what type of learning should occur and then describe it in the form of statements (outcomes). Doing this gives the teacher the opportunity to reconsider whether the outcomes are appropriate; that is, whether they suit the particular content and concepts.

Using the objectives/outcomes to set assessment criteria gives all learners an equal opportunity to demonstrate how well they have achieved the outcomes. Assessment criteria must be a well-defined standard against which a learner's performance can be measured: for example, they should indicate what level of achievement is worth an "A", and what is worth a "B". The focus is on what a learner can actually do and the skills the learner has mastered.

Assessment criteria should be explicit, which means that every learner should be able to understand how his or her work will be assessed. Similarly, every teacher should be able to explain results with reference to the stated criteria. Giving learners an opportunity to ask questions in order to clarify the criteria, and to know exactly what is expected of them in the assessment task, will ensure that learners know how to attempt different types of assessment successfully.

4.5.7 Assessment as mediating guidance and motivation

Opportunities for learners to express their understanding of the assessment criteria should be incorporated into all teaching; this interaction is how formative assessment aids learning. This dialogue gives the teacher a chance to respond to and reorient the learner's thinking. This does not mean that the teacher requires a particular response, or lacks the flexibility or the confidence to deal with the unexpected, but attempts to direct the learner towards giving the expected answer. Rather, the dialogue should be thoughtful, reflective, focused to evoke and explore understanding, and conducted so that all learners have an opportunity to think and to express their ideas.

Assessment that encourages learning fosters motivation by emphasising progress and achievement rather than failure. By giving positive feedback, teachers can use assessment to create a stimulating environment that encourages learners to learn, while guiding the learners' progress towards understanding new concepts and content. This is possible when learners are given credit for what they can do, rather than being penalised for what they have not yet mastered.

In order to use formative feedback effectively, the assessment should not be seen as more frequent testing or as informal assessment, which limits the purpose of improving learning. Formative feedback should be a process in which information about learning is evoked and used to modify the teacher's as well as the learner's understanding of how and at what level learning took place. Therefore formative feedback must be specific, immediate and personally addressed to the individual learner; teachers should pinpoint the learner's strengths and offer advice on how to develop them. Teachers should also make clear and constructive comments about any weaknesses and how these might be addressed so learners can improve. Formative feedback becomes especially worthwhile when there is a positive impact on effective learning and on the planning that is done for the next teaching session.

It may well take several feedback cycles to register an impact, and feedback should therefore be continuous and automatic. Formative feedback may take different forms; for example, moving about the room and using a conversational approach may well be needed to strengthen the learners' understanding of written feedback.

The developmental nature of formative feedback is corrective by design; teacher and learner can see which tasks have been completed successfully and can also note what is still lacking in order to achieve successful completion. Any improvement, however small, should be focused on directing and encouraging all learners, no matter what level or stage of the learning cycle they are at. This further strengthens the importance of assessment as a mediation process with the purpose of guiding, teaching and learning. Recognising the full range of achievements of all learners makes formative feedback constructive because of its motivational effect, which inspires learners to achieve their best. They become self-motivated to learn even more and become better able to master the next step, thus becoming strategic and effective learners.

Formative feedback also includes evaluation. Although either a numerical or an alphabetical mark may be awarded to the work done, the **reasons** why a particular mark has been awarded should be part of the feedback, which then guides the learner towards further improvement.

4.5.8 Assessment to improve self-reflection and reflection on learning

Where teacher and learner are working collaboratively, a metacognitive element of "I know what I've learned and why" is vital for both. Teachers can promote learners' metacognition (reflection on their own learning), by guiding them to become more conscious of their learning skills. This can be done by asking them to reflect on how well they could construct meaning, and evaluate their strategies, understanding and particular skills developed.

For formative assessment to be productive, learners should be guided to do self-assessment so that they can understand the main purposes of their learning and thereby grasp what they need to do to achieve. Self-assessment requires engaging in self-reflection, identifying the next step in their learning and deepening the ability to seek out and gain new skills; teachers can equip learners with the desire and

ability to take charge of their learning by developing this skill. Techniques include beginning the assessment process with an explanation, giving reasons why certain tasks are important and talking about links and goals. In this way self-reflection is encouraged by mediation and will result in greater willingness to engage with the assessment task.

4.5.9 Assessment to enhance emotion and create conditions that are conducive to learning

Teachers should be aware of the impact that particular comments, as well as marks and grades in general, may have on learners' confidence and enthusiasm. Comments focusing on the work rather than the person are more constructive in motivating learners and encouraging effective learning.

When learners have a good understanding of what they are attempting to achieve, the achievement becomes quicker and easier. Understanding and commitment follows when learners are involved in determining goals and identifying the criteria for assessing their progress. Learners feel more comfortable in the teaching-learning situation if a teacher communicates assessment criteria in terms that they can understand, or provides examples of how the criteria can be met in practice. Grasping such assessment criteria enables learners to fare better in peer- and self-assessment.

Research indicates there appears to be a connection between the receiving, responding, valuing and organising levels of the affective domain and the processing of information (data), as described by Forgas (1995:35–66). Forgas argues that “substantive processing”, or systematic processing, is the most elaborate cognitive processing and appears highest on the continuum, as it is the most powerfully affected by emotion (mood). Situations that require cognition of difficult, peripheral subjects or judgement of obscure, atypical subjects appear to be most affected by emotion. This might mean that valuing and organising are the levels that link with “substantive processing”. In valuing, the learner is expected to demonstrate a preference or display a high degree of certainty regarding an opinion. In organising, the learner has to accommodate different values, information and ideas in his or her own schema by comparing, relating and elaborating on what has been learned.

This has implications for the teaching-learning and assessment practices followed in the classroom, the classroom atmosphere and the choice of teaching strategies; the teacher must be aware of the emotional impact that planning and conducting teaching and assessment has on the learner.

4.6 THE USE OF TAXONOMIES IN ASSESSMENT

The teacher can use taxonomies to set learning targets and write learning objectives/outcomes, and then use these in turn as assessment criteria by drafting them to include an action verb that specifies learner performance.

Although there are many different taxonomies, we refer specifically to the 1956 version of Bloom's taxonomy and to the 2001 revised version.

4.6.1 Bloom's 1956 taxonomy

Bloom (an educational psychologist at the University of Chicago) wrote the *Taxonomy of educational objectives*, generally known as *Bloom's taxonomy* (Bloom, Engelhart, Furst, Hill & Krathwohl, 1956), which classifies different learning objectives into three domains of learning:

- **Cognitive** – referring to thinking and mental skills
- **Psychomotor** – referring to physical activities or manual skills
- **Affective** – referring to experiences, feeling, emotions or particular attitudes (Borich & Tombari, 2004:47)

Some teachers also refer to these three domains as “knowledge, skills and attitudes”. The cognitive domain has enjoyed preference over the years, but we will focus on the impact of the affective and psychomotor domains as well to create a more holistic view of teaching and assessment.

Bloom's taxonomy provides a structure in which to categorise instructional (teaching) objectives and goals (outcomes) and assessment. The taxonomy relies on the idea that not all learning objectives and outcomes have equal merit; for example, memorising facts, while important, is not at the same level as the ability to analyse or to evaluate information. In the absence of a taxonomy, teachers as instructional designers may choose, for example, to emphasise the memorisation of facts (which makes for easier testing) above other (and probably more important) capabilities. Bloom's taxonomy, in theory, helps teachers better prepare outcomes (objectives) and, from there, derive appropriate measures of learned capability and attainment of knowledge and skills.

Bloom et al. (1956:201–207) address the cognitive domain of knowledge. For Bloom, the cognitive domain deals with a learner's ability to process and utilise information in a meaningful way. Thus the cognitive domain involves working with knowledge and developing intellectual skills, including the recall or recognition of specific facts, procedural patterns and concepts that serve in the development of intellectual abilities and skills. There are six major categories, namely knowledge, comprehension, application, analysis, synthesis and evaluation. Skills in the **cognitive domain** revolve around knowledge, comprehension and “thinking through” a particular topic.

4.6.2 Anderson and Krathwohl's (2001) *Revised Bloom's taxonomy* in application

The revised version of Bloom's taxonomy (Anderson & Krathwohl, 2001) reflects a **changed reflection on thinking and learning**. In the revised taxonomy, “synthesis” is referred to as the action of creating and is deemed to be a more challenging cognitive skill than “evaluation”, which requires forming an opinion.

A reinterpretation of the revised taxonomy (Anderson & Krathwohl, 2001) makes possible the application in task choices, expected response and the ability to place a question in a particular cognitive category. The teacher must contextualise the

action word in the question; for instance, simply compiling a list requires recall of facts, while listing a **sequence of events** requires the learner to choose, collect and classify information and is therefore rated as “application” (see examples in Section 4.7).

4.6.3 The cognitive domain

The **cognitive** dimension of Bloom’s revised taxonomy (like the original version) has six skills. They are: remember, understand, apply, analyse, evaluate and create.

- **Remember (knowledge/basic conceptual knowledge).** Recognise and recall relevant information from long-term memory.
- **Understand (comprehension).** Create meaning from educational material such as reading and explanations. The subskills for this process include interpreting, exemplifying, classifying, summarising, inferring, comparing and explaining.
- **Apply.** Use a learned procedure in either a familiar or a new situation.
- **Analyse.** Break information down into its parts and think about how the parts relate to its overall structure. Learners analyse by differentiating, organising and attributing.
- **Evaluate.** Includes checking, critiquing and giving opinions.
- **Create (synthesise).** Accomplish creative tasks; generate, plan and produce.

Unlike the 1956 version, the 2001 revised taxonomy differentiates between “knowing what”, the content of thinking, and “knowing how”, the procedures used in solving problems. The knowledge dimension is the “knowing what”.

4.6.4 The affective domain

Skills in the **affective** domain describe emotional reactions and the ability to experience, for instance, empathy or joy. Affective objectives typically target awareness of and growth in **attitudes, emotion, interests, dispositions and feelings** (Nitko, 2004:22).

The Krathwohl, Bloom and Masia (1956) taxonomy has five levels of affective behaviour: receiving, responding, valuing, organising and characterising. As in the cognitive domain, these levels are presumed to be hierarchical – where higher levels require more involvement, commitment and reliance on the “self” by the learner, as opposed to the impact or influence of external feelings and attitudes on the learner.

- **Receiving.** The lowest level of being conscious of something. On this level the learner passively pays attention to an object or state of affairs. The receiving level involves first awareness, then a willingness to receive and then controlled or selected attention. Some action words describing outcomes at the receiving level are “attend, listen, look, be aware, notice”.
- **Responding.** The learner actively participates in the learning process, not only attending to a stimulus but also reacting in some way. Some action words that

describe outcomes at the responding level are “comply, follow, practice, discuss, participate”.

- **Valuing.** The learner attaches a value to an object, phenomenon or piece of information. In valuing, the learner is expected to demonstrate a preference or display a high degree of certainty. Action words linked to the valuing level are “debate, display, express an opinion, argue”.
- **Organising.** The learner can put together different values, information and ideas and accommodate them within his or her own schema, comparing, relating and elaborating on what has been learned. Learners are expected to organise their likes and preferences into a value system and then decide which are dominant. Action words linked to the organising level are “compare, formulate, decide on, define, select”.
- **Characterising.** The learner holds a particular set of values or beliefs that exerts an influence on his or her behaviour so that it becomes characteristic (Borich & Tombari, 2004:49; 50; Nitko, 2004:29; 463). Action words at the characterising level are “to develop, rearrange according to choice, provide an opinion, defend a viewpoint, argue for or against”.

In the five categories of the affective domain, some subcategories appear to describe the level on which a learner will respond or value a particular object; for instance, in showing acceptance of a value statement, a preference for a value statement or full commitment to an object or phenomenon.

4.6.5 The psychomotor domain in different taxonomies

Bloom and his colleagues did not create subcategories for skills in the **psychomotor** domain, but other theorists have created their own psychomotor taxonomies. Simpson (1972), Dave (1975) and Harrow (1972) all added subcategories. These are summarised in [Table 4.3](#).

As indicated in [Table 4.3](#), the psychomotor domain includes physical movement, coordination and the use of the motor skills. The table lists the seven major categories from the simplest to the most complex. Developing these skills requires practice, and they are measured in terms of speed, precision, distance, procedures or techniques in execution. Skills in the psychomotor domain describe the ability to physically manipulate a tool or instrument like a hand or a hammer. Psychomotor objectives usually focus on change and/or development in behaviour and/or skills.

Table 4.3 Summary of the psychomotor domain as seen by Simpson (1972), Harrow (1972) and Dave (1975)

Simpson (1972)	Harrow (1972)	Dave (1975)
Origination: Creating new movement patterns to fit a particular situation or specific problem. Learning outcomes emphasise creativity based upon highly developed skills.		
Adaptation: Skills are well developed and the individual can modify movement patterns to fit special requirements.		
Complex overt response: The skilful performance of motor acts that involve complex movement patterns. Proficiency is indicated by a quick, accurate and highly coordinated performance, requiring the minimum of energy. This category includes performing without hesitation and automatic performance. For example, players often utter sounds of satisfaction or expletives as soon as they hit a tennis ball or kick a football, because they can tell by the feel of the act what the result will be.	No discursive communication: Effective body language, such as gestures and facial expressions.	Naturalisation: High-level performance becomes natural, without the individual needing to think much about it. Examples: high-level sportspeople and athletes reacting instantly with the correct action.
Mechanism: This is the intermediate stage in learning a complex skill. Learned responses have become habitual and the movements can be performed with some confidence and proficiency.	Skilled movements: Advanced, learned movements as found in sport or acting.	Articulation: Coordinating a series of actions, achieving harmony and internal consistency; for example, producing a video that involves music, drama, colour and sound.
Guided response: The early stages in learning a complex skill that include imitation and trial and error. Adequacy of performance is achieved by practising.	Physical abilities: Stamina that must be developed for further development, such as strength and agility.	Precision: Refining, becoming more exact. Few errors are apparent: for example, working and reworking a product so that it is "just right".
Set: Readiness to act. It includes mental, physical and emotional sets, which are dispositions that predetermine a person's response to different situations (sometimes called mindsets).	Perception: Response to stimuli such as visual, auditory, kinaesthetic, or tactile discrimination.	Manipulation: Being able to perform certain actions by following instructions and practising: for example, creating a product on one's own, after taking lessons or reading about it.
Perception: The ability to use sensory cues to guide motor activity. This ranges from sensory stimulation, through cue selection, to translation.	Reflex movements: Reactions that are not learned. Fundamental movements: Basic movements such as walking or grasping.	Imitation: Observing and patterning behaviour after someone else. Performance may be of low quality: for example, copying a work of art.

4.7 TOWARDS EFFECTIVE QUESTIONING

A particular feature of the talk between teacher and learners is questions asked by the teacher. Another feature is that often teachers will not even attempt to pose more demanding questions to the learners, because they assume that they will have to wait for answers or that learners will not attempt to answer the question. Changing the formulation of the question to include another level of demand may provoke much deeper thinking and discussion in the classroom. For instance, a science teacher who begins lessons with questions such as, “what is this instrument and where would you find it?” (factual, basic conceptual) can instead ask questions such as, “why do you think these two plants have grown differently?” (comprehension and application of thoughts).

Small changes in the way questions are formulated, the use of various levels of cognitive demand in questions and even an aspect like the “wait time” for verbal questions impact on performance and the effectiveness of assessment. For instance, if “wait time” is increased, the learners answer with more confidence, the answers are longer and include alternative explanations, and some learners even improve on the attempts of others (Black et al. 2003:33–42). Although increasing “wait time” may be difficult for teachers who have a habitual desire to add something immediately after the answer is given, those who persevere come to see the value in the changed approach. The teacher who increases his or her own “wait time” in response to learners provides a further opportunity for sustained discussion in the classroom, which facilitates learning.

Teachers may also involve learners and give them time to respond by asking them to discuss their thinking in pairs or in small groups, with a respondent speaking on behalf of the group. This allows learners a choice between looking at different possible answers and voting on the options, or all writing down an answer and then reading out a selected few. It is essential that questions are used as part of a dialogue to evoke thoughtful reflection in which all learners can be encouraged to take part, for only then can the constructive process of teaching, learning and assessment start to work.

Teachers can also gain confidence in asking effective questions by discussing and practising questions with colleagues and the learners. Effective questioning generally improves the quality of the task but also encourages learners to give thoughtful answers and not simply agree or disagree with a statement (if they do this, they may struggle to justify their answer because they do not really understand what they agreed with). A question such as, “Some people describe friction as the opposite of slipperiness. Do you agree or disagree?” can be changed to, “Some people describe friction as the opposite of slipperiness. What do you think?”, which might encourage learners to provide better-substantiated answers.

4.7.1 Using a taxonomy to formulate questions

The 2001 *Revised Bloom’s taxonomy* with explanations and examples seen in [Table 4.4](#) helps us to think about the types of question that teachers use in the classroom and assessment tasks. It is easy to ask “recall” questions that ask for information and knowledge. The difficulty is to ask questions that require thinking, forming an

opinion or analysing and evaluating. In the past some teachers thought that they had to start with knowledge at the beginning of the school year and work up to synthesis towards the end of the year. What should happen is that the teacher should ask all the different types of questions from the start and make sure that there is a balance between them.

Teachers have to acknowledge the value of knowledge questions, because unless knowledge is internalised, it cannot be applied. It is important that learners understand a particular situation or concept, are able to define, describe and explain it, and then give comparisons, recommendations and opinions about it. A comprehension task in English or an experimental task in science should cover several cognitive skills at the same time.

With comprehension tasks, teachers need to meet the following criteria:

- Check whether the learners can recall particular information.
- Ascertain whether the learners understand the information.
- Ask questions that make learners apply the information.
- Challenge learners to find deeper meanings, give an opinion and justify their opinion.
- Synthesise learners' new knowledge with things they already know.

As previously mentioned, the revised Bloom's taxonomy (Anderson & Krathwohl, 2001) can be used as guideline to further develop a typology that can be applied in teaching, learning and assessment. Teachers can use the typology to set tasks, ensure questions covering different demands in tasks and projects and guide learners in expected responses to questions.

Table 4.4 illustrates the application of the revised taxonomy in teaching, learning and assessment.

Table 4.4 Application of the *Revised Bloom's taxonomy* (Anderson & Krathwohl, 2001) as a teaching, learning and assessment tool

Cognitive category	Explanation of demand in different subject fields	Examples of action words
Remembering (knowledge) • Remember something previously learned, recognise, recall relevant information • Recite facts • Define and describe basic facts • Identify, label, select and locate information • Estimate, appropriate rounding of numbers • Theorems • Straight recall • Identify from data sheet • Know appropriate vocabulary • Know formulae	Mathematics and Science: Mention a simple law or equation. Recognise content in multiple-choice questions (MCQs), for instance: read information directly from a table (e.g. the time that bus number 1234 departs from the terminal). Know appropriate vocabulary such as equation, formula, bar graph, pie chart, Cartesian plane, table of values, mean, median and mode. Know formulae such as the area of a rectangle, a triangle and a circle where each of the required dimensions is available. Languages: Tell, recite and list, e.g. identify parts of speech; match known words with definitions. Identify answers to wh- (equivalent) questions from a text (what, where, when, which etc.). Explain what synonyms are. Retrieve information, locate and find required data / information. Use correct spelling and vocabulary. Write down an unfamiliar text that is dictated. Find synonyms or antonyms for words used in a text.	Tell, recite, list, memorise, remember, define, locate, name, match, recall, repeat, state, outline

Cognitive category	Explanation of demand in different subject fields	Examples of action words
	Practical subjects: Recognise obvious facts / content in MCQs; very simple recall. Identify specific data; name, tell, recite, list e.g. identify parts of a whole; match known concepts / words with definitions. Mention a simple law or method / general perception. Identify content in a table. Identify answers to wh- (equivalent) questions from a text / case study. Explain particular terminology. Identify, e.g. metals, lubricants. Know and correctly use vocabulary related to a particular field such as equation, formula, bar graph, table of values, tolerance range, fatigue point, flashpoint, etc. Recall complex content. Give correct explanations of terminology and vocabulary, e.g. encapsulation, polymorphism. Find similar or different uses for terminology. Know formulae. Give indications of dimensions. Recall complex content.	
Understanding (comprehension) • Demonstrate a basic understanding (comprehension) of concepts and curriculum • Express in other words, make own meaning • Know and use appropriate vocabulary • Understand previously acquired information in a familiar context • In information gathering, change or match information • In use of knowledge, distinguish between aspects, compare and explain	Mathematics and Science: Understand simple relationships and simple explanations; give one-step answers; derive units. Give two-step answers and simple applications; interpret realistic diagrams; draw inferences. Identify principles that apply in a novel context. Explain; demonstrate more complex reasoning with regard to understanding and explanation. Languages: Convert active to passive forms. Identify main ideas (and supporting ones) in paragraphs. Identify cause, result and reason from a text. Explain, briefly summarise, translate and interpret realistic visuals. Summarise a text. Use two steps to arrive at an answer. Draw inferences. Practical subjects: Explain simple relationships (for example classes and subclasses). Give simple explanations. Give one-step answers. Derive units. Identify cause, result or reason. Understand and be able to react to responses and actions. Explain processes, e.g. cutting / machining. Interpret realistic visuals. Draw inferences from a text. Explain terminology, e.g. converting. Describe an approach, development process etc. Explain the meaning of particular terms, e.g. nutritional values, saturated / unsaturated / polyunsaturated, accumulating. Understand conventions and give an explanation thereof. Describe an approach, product etc. Identify principles that apply in a novel context. Give more complex reasoning with regard to understanding and explanation.	Give example, explain, summarise, translate, show symbols, edit, define, discuss, identify, follow directions



Cognitive category	Explanation of demand in different subject fields	Examples of action words
Application (applying) - Interpret and apply knowledge - Choose, collect and do basic classification of information - Modify and use existing knowledge - Use well-known procedures (the required procedure is, however, not immediately obvious from the way the problem is posed) - Decide on, for instance, the most appropriate procedure to answer a question and perform one or more preliminary calculations before determining a solution - Select the most appropriate data from options and decide on the best application	Mathematics and Science: Perform well-known procedures in familiar contexts. Know what procedure is required to solve the problem from the way the problem is posed (all the information required is immediately available to the candidate). Draw data graphs for provided data; algebraic graphs for given equations. Measure dimensions such as length, time and weight using appropriate measuring instruments. Languages: Write texts related to familiar contexts. Draft a friendly letter, basic business letter and invitation. Given the necessary information, organise it into a presentable poster or a table to promote ready comprehension. Draw information from a given text, illustrate in words, construct ideas. Propose a course of action based on a straightforward case study. Collect information from available texts to support a particular position/opinion and represent the position in own words. Undertake guided research to collect information necessary for a task. Organise information into a suitable form (report, memorandum, visual presentation). Practical subjects: Perform well-known procedures in familiar contexts. Know what procedure is required to solve a problem from the way the problem is posed (all the information required is immediately available to the candidate). Simplify procedures. Draw information from a given text and illustrate. Propose a course of action based on a straightforward case study. Use, run or operate web-based applications. Select tools. Identify and use procedures. Make practical applications in own life situation. Measure dimension such as length, time and weight using appropriate measuring instruments. Assemble equipment in a particular sequence. Sort information, for instance in descending order, according to a particular description field. List processes in a particular sequence. Make conversions in currencies, weights, temperatures. Extrapolate, e.g. multiply a recipe to cater for a much larger number. Understand and change applications, e.g. adapt a quotation. Give indications of dimensions. Use procedures to solve the problem based on the way the problem is posed (all the information required is immediately available to the candidate). Apply actions such as formulating checklists; show and display as single application.	Demonstrate, use, guide, interpret map / chart, interpret procedures and use, decide and apply, convert, illustrate, locate and describe, identify and describe sequencing, sketch, choose particular action, sort information, use instruments or equipment, build, cook, arrange, solve

Cognitive category	Explanation of demand in different subject fields	Examples of action words
Analysis (analysing) • Understand how parts relate to a whole • Understand structure and motive; note fallacies • Analyse information in a new or unfamiliar context • Examine and differentiate • Distinguish to find the most appropriate • Research and investigate information • Interpret and extrapolate from solutions obtained by solving problems based in unfamiliar contexts • Use reasoning to solve non-routine problems and unseen problems • Break down a problem into its constituent parts – identify the problem and then use appropriate methods to solve it • Solve non-routine problems based on real contexts	Mathematics and Science: Plug into a formula with only one unknown. Analyse a chemical equation. Solve non-routine, unseen problems by demonstrating higher-level understanding and cognitive processes. Demonstrate qualitative proportional reasoning. Explain more complex relationships between concepts, data or graphs. Construct or interpret schematic diagrams. Solve problems with two or more steps. Make basic logic leaps and proportional reasoning. Interpret tables of data. Create complex abstract representations. Combine concepts across subfields. Interpret and extrapolate from solutions already obtained by solving problems in unfamiliar contexts. Use reasoning to solve non-routine problems. Break down a problem into its constituent parts – identify what is required and then use appropriate methods in solving the problem. Languages: Create texts in known or practised context; draft an invitation, write a letter of thanks or condolence, but with some variation that prevents the text from being strictly formulaic. Write a persuasive essay. Take minutes of a meeting. Deal with more complex case studies and propose a course of action, e.g. in report form. Interpret, report on, sort, debate, e.g. by preparing a speech and / or presentation. Use reasoning to develop a proposal to solve a problem. Analyse a problem into its constituent parts; pinpoint the core and use appropriate methods to solve the problem. Practical subjects: Demonstrate procedures; work with chemical equations / mixtures to enable procedures. Read and interpret scenarios and case studies, identify the cause and suggest changes / rectifications. Determine the feasibility of e.g. an intended business. Conduct analysis of procedures, identify strengths and weaknesses. Interpret, make adjustments, provide suggestions / recommendations and give reasons for opinions. Solve non-routine, unseen problems by demonstrating understanding. Demonstrate qualitative proportional reasoning and more complex relationships or explanations. Construct or interpret schematic diagrams. Solve problems with two or more steps and basic logic leaps. Interpret tables of data. Deal with more complex case studies and propose courses of action. Demonstrate complex abstract representation. Combine concepts across subfields. Extrapolate from solutions already obtained by solving problems in unfamiliar contexts. Use reasoning to solve non-routine problems; break down a problem into its constituent parts, identify what is required and then use appropriate methods to solve the problem.	Investigate, classify, categorise, analyse and compare, solve, relate, distinguish, identify and describe similarities and differences, interpret diagrams, interpret case study, report on, sort, debate

Cognitive category	Explanation of demand in different subject fields	Examples of action words
	Analyse a problem into its constituent parts; pinpoint the core and use appropriate methods to solve the problem. Give answers to “what if” questions.	
Evaluation (evaluating) • Make judgements (evaluate), critique and make recommendations after considering all material available • Weigh possibilities and make recommendations • Judge the value of something using criteria. Support the judgement; challenge it for deeper meaning	Mathematics and Science: Substantiate opinions. Critique solutions to problems and statements about situations made by others. Languages: Substantiate an opinion. Critique statements about situations made by others involving critical argument, novel or abstract contexts. Practical subjects: Substantiate opinions. Critique solutions to problems. Critique statements about situations made by others; defend a critical argument. Refactor and test a programme and write feedback. Defend and provide substantiation for an opinion. Write data-related feedback. Design quotation forms and work out an event quotation. Work out an itinerary according to particular requirements.	Judge, evaluate, give an opinion, give a viewpoint, critique information, decide what would be the best route / provide a solution and explain why, estimate cost, rate / score, support, justify, find some substantiation, argue, defend an opinion
Creation / synthesis (creating; synthesising) • Construct new material • Synthesise, create or find innovative solutions • Formulate new ideas • Re-form individual parts to make a new whole • Create tasks, generate, produce and reproduce	Mathematics and Science: Use complex reasoning involving synthesis, critical argument linked to novel or abstract contexts etc. Generalise patterns observed in situations, make predictions based on these patterns and / or other evidence and determine conditions that will lead to desired outcomes. Work with complex problems involving insight and logic leaps. Formulate new equations (using all unknowns). Create new solutions to problems. Redesign Languages: Generalise patterns observed in situations. Work with complex problems involving insight and logic leaps. Create new solutions to problems. Write poetry, a novel or drama. Write a complex review / critique. Rewrite information / a story for a new context and setting. Practical subjects: Generalise patterns observed in situations, make predictions based on these patterns and / or other evidence and determine conditions that will lead to desired outcomes. Work with complex problems involving insight and logic leaps. Formulate new equations using all unknowns; create new solutions to problems. Redesign / rewrite and adapt an existing programme. Modify particular procedures or methods. Demonstrate complex reasoning involving synthesis. Provide imaginative answers to / fully substantiate answers to “what if” - questions. Use critical argument linked to abstract contexts.	Compose, design, create, invent, construct, forecast, rearrange, rewrite, imagine, adapt, modify the existing into new, formulate hypotheses, generate, compose, develop

4.7.2 Features of effective questioning

4.7.2.1 Contextualised action words

Learners should understand what is expected of them. So, when teachers set a task, it should be in writing and it should be clear **how** the task will be assessed. The best way of doing this is to put the main assessment criteria and indicators into the instructions for the task. More detailed performance indicators can go into the marking criteria/memorandum.

The teacher must fit the action word in the task to the context. For instance, to list known items requires recalling facts (knowledge), but to list a sequence of events requires the learner to choose, collect and do a basic classification of information and is therefore rated as application.

4.7.2.2 Clear and accessible language

Most South African learners are assessed in a language that is not their mother tongue. When learners' main language is not English, it is very important to phrase assessment tasks clearly and in language that is easy to understand. Writing questions in complicated English is unfair and discriminates against second-language speakers. Learners might well know the answer, but if they don't understand the question, they don't have a chance to demonstrate their knowledge.

Here are some tips for writing simpler and more accessible English:

- Keep sentences short and the vocabulary and terminology suitable to the level of the learners. Compare the following two questions:
 - For a vehicle moving in a straight line, which physical quantities could be determined by finding the gradient (slope) of its velocity-versus-time graph at a specific point on the graph?
 - A car moves along a straight road. Plot the velocity-versus-time graph for the motion. Which quantity do we get from the slope of the graph at a specified time?
- Use active rather than passive voice. For example, “add sugar to the cup of tea” is better than “sugar is added to the cup of tea”.
- Avoid words with many syllables. For example, “use the remedy” is better than “implement the remedy”.
- Be careful when using pronouns that it is clear what they refer to. For example, who are “they” and “them” in the following sentence? “When teachers explain things, they often forget that they should ask them diagnostic questions first.”
- Encourage learners to answer in ways with which they feel most comfortable. For example, let learners use words in languages other than English (code-switch) if that is how they can best express an idea, or allow several different ways of answering, such as giving a definition by using words or a labelled diagram.

4.7.2.3 Comprehensive instructions

It is of utmost importance to give clear instructions of what is required / expected

in a task. Learners would not be able to complete a task successfully if they do not understand the question or the instructions.

Keep the following in mind when writing instructions:

- Use clear language according to the level/grade of the learner.
- Use action words to describe what activities should be part of performing the task.
- Link instructions to the set outcomes and the assessment criteria in order to make sure that what is expected is what is assessed.
- Re-read tasks after setting them to make sure that no steps are left out.

4.8 FROM NATIONAL CURRICULUM STATEMENT TO CURRICULUM AND ASSESSMENT POLICY STATEMENT

Figure 4.2 shows the developments in curriculum design over the past number of years. In terms of the methods and assessment, Figure 4.2 reflects what is being aimed for rather than what has been achieved.

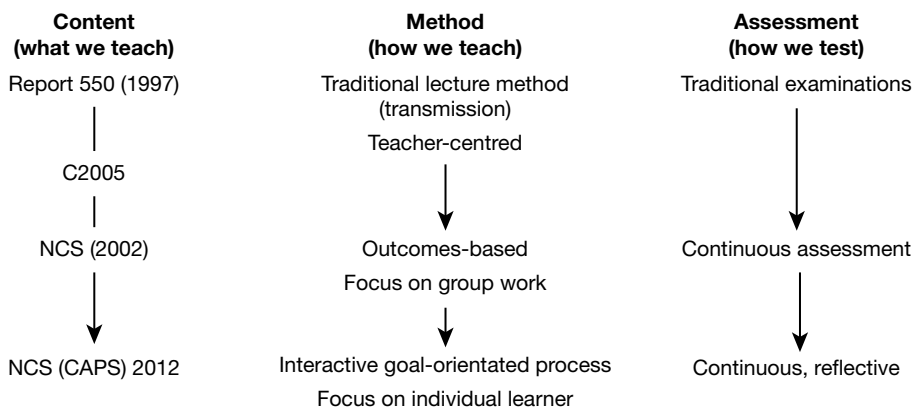


Figure 4.2 Changes in curriculum design and assessment

According to the Department of Basic Education (Pinnock, 2011), the CAPS is not a new curriculum, but an amendment to the National Curriculum Statement (NCS). It therefore still follows the same process and procedure as the NCS Grades R to 12 (2002) (Pinnock, 2011). The amendments were made to address four main concerns about the NCS as identified by a task team and reported to the Minister of Education in October 2009 (Department of Basic Education, 2009). The four concerns were

1. complaints about the implementation of the NCS
2. teachers who were overburdened with administration
3. different interpretations of the curriculum requirements
4. underperformance of learners.

(See more detailed information in [Section 4.8.1](#).)

Much of the debate about the CAPS is about whether it is an amendment, repackaging or even re-curriculation. If it is accepted that the NCS has been repackaged, it is to make it more accessible to teachers and to give details for every subject in each grade of what content teachers ought to teach and assess. These details include clearly delineated topics for each subject and a recommended number and type of assessments per term (Pinnock, 2011). This means that the CAPS is an adjustment to **what** to teach (curriculum) and not necessarily **how** to teach (teaching methods).

There is still much debate about outcomes-based education (OBE) being removed. It is, however, important to keep in mind that OBE is an approach to teaching and impacts on teaching strategies that refer to the preferred methodology used to unpack and implement the curriculum. The CAPS documents are written in content format rather than outcomes format, which means that it is more oriented to traditional teaching methods than to OBE methods (Maskew Miller Longman, 2012:8).

4.8.1 Background to investigating the implementation of the National Curriculum Statement

The information below is adapted from the Department of Basic Education Report (2009), Coetzee (2012), and the CAPS Stakeholder Workshop presentations (Department of Basic Education, 2011b).

In July 2009, the then Minister of Basic Education appointed a panel of experts to investigate the challenges and problems experienced in implementing the NCS and to develop recommendations designed to improve its implementation. The minister's brief was in response to wide-ranging verbal and written comments received over several years from a range of stakeholders, such as teachers, parents, teacher unions, school management and academics, on the implementation of the NCS. While there has been positive support for the implementation of the RNCS / NCS, there has also been considerable criticism of various aspects of its implementation, manifesting in teacher overload, confusion and stress, and widespread learner underperformance in international and local assessments.

While several minor interventions were made over time to address some of the challenges of implementing the curriculum, these changes did not have the desired effect. The panel consequently set out to identify the challenges and pressure points, particularly with reference to teachers and learning quality, to deliberate on how things could be improved and to develop a set of practical interventions.

The report of the panel set out the context, nature and causes of these pressure points, and presented the minister and the Department of Education (now the Department of Basic Education) with a five-year plan to improve teaching and learning via a set of short-term interventions aimed at providing immediate relief and focus for teachers, and medium- and longer-term recommendations intended to achieve real improvement in student learning within a five-year period.

The panel worked closely with the deputy directors-general for General Education and Training (GET) and Further Education and Training (FET) to identify key

areas for the investigation, using the major complaints and challenges encountered since 2002 when the NCS was introduced. The key areas were identified as follows:

- Curriculum policy and guideline documents
- Transitions between grades and phases
- Assessment, particularly continuous assessment
- Learning and teaching support materials (particularly textbooks)
- Teacher support and training (for curriculum implementation)

Policy and guideline documents

The panel focused specifically on the development and purpose, dissemination and support, use and availability, adequacy, clarity, accessibility and load of policy and guideline documents for the NCS.

Transition between grades and phases

Teachers and stakeholders were asked if there were problems, and if so, specifically where these problems occurred; the nature of the problems; and what stakeholders thought should be done about them. Particular attention was given to the transition from Grade 3 to 4 and from Grade 9 to 10.

Assessment

Assessment has been the area of the national curriculum that has received the most criticism since C2005 was implemented. The panel asked what the problems were with the assessment policies, whether there was sufficient clarity and appropriate use of assessment policies and guidelines, and what stakeholders, particularly teachers, thought should be done to address the problems.

Learning and Teaching Support Material (LTSM) and teacher support

LTSM and teacher support were two critical areas that were brought into the panel's deliberations because they were two of the most commonly raised issues and are vital to successful curriculum implementation.

4.8.2 Challenges identified and recommendations made

4.8.2.1 Five-year plan

An important finding of the review is that there is no clear, widely communicated plan for the implementation and support of the NCS. Many teachers and parents complained that they had no vision of the “bigger picture” in terms of what education and the curriculum set out to achieve, specifically with regard to the learners of South Africa. Coupled with poor learner performance in local and international tests, this has led to pockets of distrust in the education system.

Recommendation: A coherent, clear, simple five-year plan to improve teaching and learning across the schooling system must be developed and adhered to; it must be clearly and widely communicated to the nation. Offering support to teachers and improving learner performance must be its central aims. Mechanisms to monitor

the implementation of the plan, through regular assessment of whether it is having the desired effect on learner and teacher performance, must be built into the plan.

4.8.2.2 Streamline and clarify policies

Teachers and stakeholders were concerned about the plethora of policies, guidelines and interpretations of these at all levels of the education system, from the Department of Education down to provincial, district and subject advisor level. All involved believed that the NCS documents should be rationalised into a set of single, coherent documents per subject or learning area, per phase, from Grade R to Grade 12. Discrepancies in and repetition of information in the different NCS documents (especially the Learning Programme Guidelines and Subject Assessment Guidelines) should be resolved. These new documents must be made available to all schools, district offices and parents via print and digital media. In other words, everyone should have access to the national curriculum in the form of a comprehensive document. The documents should be prepared by September 2010, for implementation at the beginning of 2011. The Foundations for Learning documents of GET and the Subject Assessment Guidelines of FET will provide useful starting points for drawing up a new Curriculum and Assessment Policy.

Recommendation: Develop one Curriculum and Assessment Policy document for every learning area and subject (by phase), which will be the definitive support for all teachers and help address the complexities and confusion created by vague curriculum and assessment policy and lack of specification, and by the proliferation of documents and their misinterpretation.

4.8.2.3 Clarify the role of subject advisors

The current system is almost completely dependent on subject advisors (and district staff) to act as intermediaries between curriculum policy and implementation in the classroom. In every province, teachers mentioned that there were several challenges around the role of the district. This was reinforced by numerous electronic and written submissions.

- Firstly, the role of the subject advisor differs from province to province.
- Secondly, many teachers see the role primarily as technician and demanding unnecessary administrative tasks and “box ticking”.
- Thirdly, there are too few subject advisors nationwide to provide thorough and qualitative in-class support for teachers. Many do not have sufficient knowledge and skills to offer teachers the support they require to improve learner performance.
- Finally, in the absence of role clarification and training for the subject advisors, many have resorted to developing tools themselves to help interpret policies and guidelines, and these have contributed to the confusion and proliferation of documents and paperwork.

Recommendation: Clarify subject advisor roles nationally and specify the exact nature of in-classroom and school support they should provide to teachers. Subject advisor roles differ from province to province and district to district, and yet this role is the main intermediary between the curriculum policy and classroom interpretation.

4.8.2.4 Teacher workload and administrative burden

Teachers across the country complained about onerous administration requirements and duplication of work. This has partially been addressed by the above recommendation concerning support roles in the districts and the subject advisory services.

However, the planning requirements for teachers have become unnecessarily complicated and appear to make little contribution to improving teaching or learner attainment; on the contrary, the administrative burden of assessment and planning appears to impact negatively on teaching and contact time.

Recommendation: Reduce teachers' workload, particularly with regard to administrative requirements and planning, to allow more time for teaching.

4.8.2.5 Assessment

Assessment has been a challenge for teachers ever since the implementation of C2005, when an unnecessarily complicated approach was introduced. Further complicating the situation in the GET phase, a new assessment policy was never developed to support the NCS. As a result, teachers and parents are confused about several aspects of assessment, from progression requirements to performance descriptors. The country's repeated poor performance in local and international tests has left parents and other stakeholders sceptical of the curriculum and related assessment practices.

Recommendation: Simplify and streamline assessment requirements and improve the quality and status of assessment by making the GET and FET phases consistent, conducting regular national assessment at Grades 3 and 6, and replacing the Common Tasks of Assessment (CTA) with annual National Testing for all Grade 9 learners in Mathematics, Home Language and English. The analyses of these national tests should be used to diagnose what to prioritise and target for teacher and learner improvement.

4.8.2.6 Transition and overload in the Intermediate Phase

South African children have fared particularly poorly in local and international testing in Grade 3 and Grade 6. This was repeatedly mentioned in parental submissions and at the teacher hearings. Teachers pointed to several factors that contribute to this result. Firstly, there are too many subjects in the Intermediate Phase, where learners shift from three learning areas in Grade 3 to nine in Grade 4. Secondly, most provinces only introduce English as a subject in Grade 3 and not in Grade 1, as suggested in the NCS policy. In making the transition to Grade 4, learners are faced with English as LoLT and triple the number of learning areas. This makes for a challenging transition for both learners and teachers and contributes to underperformance in the Senior and FET phases.

Recommendation: firstly, reduce overload in the Intermediate Phase by reducing the number of learning areas to six subjects, including two languages. Secondly, underscore the importance of learning English in the curriculum from Grade 1 by introducing a fourth subject in the Foundation Phase – English as a First Additional Language.

4.8.2.7 Learning and teaching support material and textbooks

The proper and comprehensive use of textbooks was discouraged and undermined by C2005, and teachers were encouraged to produce their own materials. Yet both local and international research has shown that the textbook is the most effective tool to ensure consistency, coverage, appropriate pacing and better-quality instruction in implementing a curriculum. During the hearings, teachers complained that they were expected to perform tasks such as developing learning and teaching support materials that would be best placed in the hands of experts. Having to be “curriculum developers” eroded their time for teaching. Other LTSM-related complaints were that some provinces had not provided sufficient textbooks for learners for years, and that some provincially developed catalogues contained LTSMs of dubious quality.

Recommendation: The quality assurance and catalogue development of textbooks and other LTSMs must be centralised at the national level; the useful role and benefits of textbooks must be communicated at the highest level, and each learner from Grade 4 to Grade 12 should have a textbook for each subject.

4.8.2.8 Teachers and training

The teacher hearings and submissions were unanimous in suggesting that current teacher development policies to support the curriculum were often too generic and superficial and did not provide the needed support to teachers. They made it clear that addressing the need to upgrade teachers’ skills with a “one-size-fits-all” approach would not be appropriate. Teachers also complained that most tertiary institutions did not cover the NCS thoroughly enough and that many newly trained teachers were not competent to teach the curriculum. The almost unanimous view across all provinces was that any future training must be subject-specific, and that support staff such as school management, subject advisors and district staff also need to be trained and have clarity on their roles and responsibilities.

Recommendation: The training of teachers to support curriculum implementation should be subject-specific and targeted only where needed, and all support staff, including school management, subject advisors and district officers, should also undergo training on the Curriculum and Assessment Policy. The dates for the implementation of CAPS were set as follows:

January 2012: The Foundation Phase (Grades R–3) and Grade 10 (FET)

January 2013: The Intermediate Phase (Grades 4–6) and Grade 11 (FET)

January 2014: The Senior Phase (Grades 7–9) and Grade 12 (FET)

2011 was set aside to prepare for the implementation of the CAPS.

4.8.3 Similarities and differences: the National Curriculum Statement and the Curriculum Assessment Policy Statement

The NCS and CAPS documents have a similar rationale in terms of situating the curriculum within the aims of the South African Constitution. In addition, the NCS includes a rationale and description of OBE and a large amount of information on the background and history of the NCS. Much of this relates to redressing the imbalances caused by apartheid education.

In both the NCS and CAPS mention is made of the curriculum conveying the knowledge, skills and values that should be communicated in a post-apartheid South Africa. Both contain a similar list of values, which include social justice, human rights, environmental awareness and respect for people from diverse cultural, religious and ethnic backgrounds. Table 4.5 summarises the similarities and differences between the documents.

Table 4.5 Summary of core changes from NCS to CAPS

Concept / feature / dimension	NCS	CAPS
Structure of qualification	Gr R to 9 (as outlined in RNCS 2002) General Education and Training Certificate (GETC) mentioned in overview document, with exit level at Gr 9 GETC never realised in practice	CAPS = Gr R to 12 GETC is not mentioned in CAPS Only exit level is at Gr 12 (NSC) Conceptual shift to 13 years of schooling as the new norm
Critical outcomes	Explicitly mentioned	Also incorporated in aims and curriculum content and skills CAPS phrases Critical Outcome 2 as “work effectively as individuals and with others as members of a team” (specific reference to individuals)
Development outcomes	Reflect on and explore a variety of strategies to learn more effectively Participate as responsible citizens in the life of local, national and global communities Be culturally and aesthetically sensitive across a range of social contexts Explore education and career opportunities Develop entrepreneurial opportunities	Not mentioned explicitly
Purpose(s)	Outlined as: equipping learners, irrespective of their socioeconomic background, race, gender, physical ability or intellectual ability, with the knowledge, skills and values necessary for self-fulfilment and meaningful participation in society as citizens of a free country; providing access to higher education; facilitating the transition of learners from education institutions to the workplace; and providing employers with a sufficient profile of a learner's competences	No explicit list of purposes given (but a similar list is included in NSC SAQA document for FET)
Principles	NCS = OBE, described as “participatory, learner-centred and activity-based education”	CAPS = “encouraging an active and critical approach to learning, rather than rote and uncritical learning of given truths”

Concept / feature / dimension	NCS	CAPS
Inclusivity	Mentioned in passing	Foregrounded and described in detail as one of the general aims
Outcomes / objectives	Learning outcomes	Concepts, content and skills
Assessment link	Assessment standards	Content / assessment
Planning	Phase plan	Overview across grades
	Work schedules	Overview of year plan
	Learning programme development	Subject interpretation of curriculum content for instructional designs
	Lesson plans	Lesson plans
Integration	Principle of coherence between the learning areas made explicit	Not mentioned
Role of teacher	Teacher role described as: "key contributor to transformation of education in South Africa"; "qualified, competent, dedicated and caring"; "able to fulfil the various roles outlined in the Norms and Standards for Educators: these include being mediators of learning, interpreters and designers of learning programmes and materials," etc.; "considerable room for creativity and innovation on the part of teachers in interpreting what and how to teach"	No mention of the envisaged teacher Little room for interpretation of what and how to teach
Role of learner	Learner to participate as group member (focus on group work)	Focus on learner taking individual responsibility for learning
Approach in learning	Discovery-based learning	Content-driven learning; no emphasis on critical thinking about knowledge validity and bias

The following new features of the CAPS should also be kept in mind:

Foundation Phase: Instructional time is increased.

- Numeracy is now called Mathematics, and Literacy is called Language.
- First Additional Language is added to the Foundation Phase (one language must be the LoLT).

Intermediate Phase: The eight learning areas are changed to six **subjects**.

Senior Phase: School-based Assessment to count 40% and end-of-year examination to count 60%.

FET Phase: The content has been reorganised for several of the subjects and the exam structure has changed in some of the subjects.

All grades have to use a seven-point scale.

- The documents are organised around topics (content/themes) and skills.
- Learning areas are now called **subjects**.
- A week-by-week teaching plan is included in the documents.

- Curriculum statements and learning programme guidelines are replaced by one document called the CAPS.

Tables 4.6 to 4.8 summarise changes from the NSC to CAPS regarding assessment and teaching time allocation per week for the different learning areas/subjects.

Table 4.6 Changes to assessment

ASSESSMENT CHANGES	
All grades will use a seven-point scale	Foundation, Intermediate, Senior and FET phases
Grades 3, 6 and 9: external annual assessment	Set externally and marked internally Moderated by districts and sample-marked and moderated by National Education
Common Tasks for Assessment will be replaced with Annual National Assessments	Mathematics, Home Language and First Additional Language set externally and marked internally
Weighting of Continuous Assessment (CASS) to examination	Grades R–3: 100% CASS Grades 4–6: 75%: 25% Grades 7–9: 40%: 60% Grades 10–12: 25%: 75%

Table 4.7 Interpreting the seven-point scale

Achievement level	Achievement description	Marks (percentage)
7	Outstanding Achievement	80–100
6	Meritorious Achievement	70–79
5	Substantial Achievement	60–69
4	Adequate Achievement	50–59
3	Moderate Achievement	40–49
2	Elementary Achievement	30–39
1	Not Achieved	0

Table 4.8 Subjects per phase structure: time allocations

FOUNDATION PHASE (hours per week)	
Language	Home Language (HL) (6) and First Additional Language (FAL) (4 / 5)
Mathematics	Mathematics (7)
Life Skills divided into four "topics"	Beginning Knowledge (0.5) Creative Arts (2) Physical Education (2) Personal and Social Well-being (1)

INTERMEDIATE PHASE (hours per week)	
Eight learning areas in NCS reduced to six subjects in CAPS	Home Language (6) First Additional Language (5) Mathematics (6) Natural Sciences and Technology (3.5) Social Sciences (3) Life Skills (4)
Increase in time spent on languages	Languages are split into two separate subjects: Home Language (6) First Additional Language (5)
Technology removed as an individual learning area	Natural Sciences changes to Natural Sciences and Technology
Economic Management Sciences removed	Only taught from Grade 7
Arts and Culture removed	Creative Arts incorporated into Life Skills
Life Orientation changed to Life Skills	Life Skills divided into three "topics": Creative Arts (1.5) Physical Education (1) Personal and Social Well-being (1.5)

SENIOR PHASE (hours per week)	
Home Language	5
First Additional Language	4
Mathematics	4.5
Natural Sciences	3
Social Sciences	3
Technology	2
Economic and Management Sciences	2
Life Orientation	2
Creative Arts	2

FET PHASE (hours per week)	
Home Language	4.5
First Additional Language	4.5
Mathematics / Mathematical Literacy	4.5
Life Orientation	2
Three electives	12 (3 × 4 hrs)

4.8.4 Making sense of changes to policy documents

The CAPS for each approved school subject should be read and implemented with the National Policy Pertaining to the Programme and Promotion Requirements of the NCS Grades R–12 (Department of Basic Education, 2012a), and the National Protocol for Assessment Grades R–12 (January 2012) (Department of Basic Education, 2012b).

Schools must ensure they have access to the following documentation (from January 2012):

- CAPS per subject
- National Policy Pertaining to the Programme and Promotion Requirements of the NCS Grades R–12 (Department of Basic Education, 2012a)
- National Protocol for Assessment Grades R–12 (NPA) (Department of Basic Education, 2012b)
- The Regulations pertaining to the National Curriculum Statement Grades R–12, *Government Gazette* 36041 (Department of Basic Education, 2012c)
- Determination of minimum outcomes and standards and a national process and procedures for the assessment of learner achievement as stipulated in the National Curriculum Statement Grades R–12, *Government Gazette* 36042 (Department of Basic Education, 2012d)
- Policy on Minimum Requirements for Teacher Education Qualifications (MRTEQ), which replaces the Norms and Standards for Educators (Department of Higher Education and Training, 2011)
- National Policy on Assessment and Qualifications for Schools in the General Education and Training Band, Government Notice No. 124 in *Government Gazette* 29626 (Department of Education, 2007)
- *Government Gazette* 32836, Curriculum Review (Department of Education, 2009)
- *Government Gazette* 30880, Foundations for Learning (Department of Education, 2008b)
- *Government Gazette* 29466, Inclusive Education (Department of Education, 2006b)
- *Learner's Book* for learners and *Teacher's Guide* for teachers
- New textbooks

Table 4.9 Policy documents for implementation: 2012–2014

Documents to be gradually phased out and replaced		Documents to be gradually phased in and implemented: Grades R–3 and 10 from January 2012 Grades 4–6 and 11 from January 2013 Grades 7–9 and 12 from January 2014
• NCSs grades R–9 (GG No. 23406, May 2002) • NCSs grades 10–12 (GG No. 25545, Oct 2003/GG No. 28300, Dec 2005) • National Senior Certificate: a qualification at Level 4 on the NQF (GG No. 27819, July 2005) • An addendum to the policy document for the National Senior Certificate: a qualification at Level 4 on the NQF, regarding learners with special needs (GG No. 29466, Oct 2009)	Amended and replaced with	• NCS grades R–12 • CAPS • National Policy pertaining to the Programme and Promotion Requirements of the National Statements grades R–12
• An addendum to the policy document for the National Senior Certificate: a qualification at Level 4 on the NQF, regarding the National Protocol for Assessment grades R–12, (GG No. 29467, Dec 2006) • National Policy on Assessment and Qualifications for Schools in the General Education and Training Band (GG No. 29626, February 2007)	Replaced with	• National Protocol for Assessment Grades R–12 • <i>Government Gazettes</i> 36041 and 36042, December 2012
• Subject Statements, Learning Programme Guidelines and Assessment Guidelines for grades R–9 and grades 10–12	Repealed and replaced with	• CAPS for grades R–12 • <i>Government Gazettes</i> 36041 and 36042, December 2012

Source: Adapted from Pinnock (2011); Department of Higher Education and Training (2011)

4.8.4.1 A closer understanding of the National Protocol for Assessment Grades R–12

The National Protocol For Assessment Grades R–12 replaces the “addendum to the policy document, the National Senior Certificate: a qualification at Level 4 on the NQF, regarding the National Protocol for Assessment Grade R–12, (29467) December 2006 and National Policy on Assessment and Qualifications for Schools in the General Education and Training Band (29626) February 2007”.

Aspects of policy to adhere to

- Progression (grades R–8) and promotion (grades 9–12) of learners to the next grade should be based on recorded evidence in formal assessment tasks.

- Teachers are not required to record performance in informal or daily assessment tasks.
- The teacher must submit the annual formal programme of assessment to the school management team before the start of the school year.
- Failure by the teacher to maintain a file of formal assessment tasks constitutes an act of misconduct.
- Learners who, for no valid reason, absent themselves from the end-of-year final examinations or scheduled School-based Assessment tasks or Practical Assessment tasks must not be permitted to write the final end-of-year examination.

What should a teacher's file contain?

- Annual teaching plan
- Assessment plan
- Formal assessment tasks
- Memoranda
- Indication of textbooks and other resources
- Record sheets with learners' marks
- Informal notes or any interventions that are planned to assist learners

The teacher's file must be correct, kept up to date and indicate formal tasks and should be available on request at all times.

Aspects of recording and reporting

The following are applicable to recording and reporting per phase:

- *Foundation Phase (grades R–3):*
 - Record and report in national codes and their descriptions.
- *Intermediate Phase (grades 4–6):*
 - Record and report in national codes and their descriptions and percentages.
- *Senior Phase (grades 7–9):*
 - Record and report in national codes and their descriptions and percentages.
- *FET (grades 10–12):*
 - Record in marks and report in percentages.

Content in the policy document

- Formal Assessment tasks (School-based Assessment). The number and type of these tasks are prescribed, as well as their contribution to CASS.
- Practical Assessment tasks. The number and type of these tasks are prescribed, as well as their contribution to CASS.
- End-of-year examinations. The format of these examinations is prescribed and they are usually conducted, marked and moderated at the school (school-based),

except in some cases, like the Grade 12 examination, which is externally set, marked and moderated.

- Progression and promotion requirements.
- Management of school assessment. This is prescribed in great detail, as are the competencies and skills that must be included in certain assessment tasks.
- Information on how all assessments must be moderated to ensure that they are fair, valid and reliable.
- School assessment records and basic requirements for learner profiles.
- Teacher files.
- Report cards, record sheets and schedules for Grades R–12.

4.8.4.2 A closer understanding of the National Policy pertaining to the Programme and Promotion Requirements of the National Curriculum Statement Grades R–12

The document clearly indicates in the section on purpose that it ought to be read with the CAPS for each approved school subject and with the National Protocol for Assessment Grades R–12 (January 2012) (Department of Basic Education, 2012b). For the Foundation, Intermediate and Senior phases, the policy gives clarity on the following:

- Approved subjects
- The programme requirements for the grades in the particular phase
- The promotion requirements for the phase
- Guidelines regarding assessment
- Guidelines regarding recording and reporting
- Time allocation indications

For the FET Phase, the following are covered:

- Duration
- Entrance requirements for FET
- The programme requirements for the grades in the particular phase
- Provisos
- The promotion requirements for the phase
- Guidelines regarding assessment
- Guidelines regarding recording and reporting
- Concessions

Figure 4.3 gives a summary of assessment in all phases, including time allocation, weight, progression and promotion, making use of the seven-point scale.

GRADES	SUBJECT	TIME ALLOCATION (hours per week)	ASSESSMENT WEIGHTING	NUMBER OF FORMAL RECORDED TASKS					PROGRESSION AND PROMOTION	TOTAL HOURS
				TERM 1	TERM 2	TERM 3	TERM 4	TOTAL		
Foundation Phase	1 - 2	Home language min7/max8 (10 Gr R)	100% CASS	1	2	2	2	7	Codes 1-7 Promotion: 4 in Home Lang and 3 in FAL 3 in Maths or Age cohort 'unless displays a lack of competence to cope with the following grade's work'	23
		First Additional Language (no Grade R)		1	1	1(2)	1	4/5		
		Mathematics		2	2	2	1 (2)	7 (8)		
		Life skills		1	1	1	1	4		
		Beginning Knowledge								
		Creative Arts								
		Physical Education								
		Personal and Social Well-being								
		1								
		2								
Intermediate Phase	3	Home language min7/max8	100% CASS	1	3	3	2	9	Codes 1-7 Promotion: 4 in Home Lang 3 in FAL 3 in Maths 3 in any 2 other subjects or Age cohort 'unless displays a lack of competence to cope with the following grade's work'	25
		First Additional Language		1	2	2	1	6		
		Mathematics		2	3	3	2	10		
		Life skills		1	1	1	1	4		
		Beginning Knowledge								
		Creative Arts								
		Physical Education								
		Personal and Social Well-being								
		2								
		1								
Senior Phase	4 - 6	Home language	75% CASS: 25% EXAM	2	2*	2	2*	8	Codes 1-7 Promotion: 4 in Home Lang 3 in FAL 3 in Maths 3 in any 2 other subjects or Age cohort 'unless displays a lack of competence to cope with the following grade's work'	27.5
		First Additional Language		2	2*	2	2*	8		
		Mathematics		2	2*	2	3*	9		
		Science and Technology		2	2	2	2*	8		
		Social Sciences		1	1	1	1*	4		
		History		1	1	1	1*	4		
		Life Skills		1(CAT)	1(CAT)	1(CAT)	1(CAT)	4		
		Creative Arts		1(PET)	1(PET)	1(PET)	1(PET)	4		
		Physical Education		1	1	1	1*	4		
		Personal and Social Well-being								
Further Education and Training (FET)	7 - 8	Home Language	40% CASS: 60% EXAM	3	3*	3	2*	11	Codes 1-7 Promotion: 4 in Home Lang 3 in FAL 3 in Maths 3 in any 3 other subjects 2 in any 2 other subjects Note 'No learner should stay in the same phase for longer than four years, except under exceptional circumstances.'	27.5
		First Additional Language		3	3*	3	2*	11		
		Mathematics		2	3*	3	3*	11		
		Natural Sciences		2	3*	2	3*	10		
		Social Sciences		1+1	2*+2*	1+1	1*+1*	10		
		Technology		2	2	2	2*	8		
		Economic Management Sciences		2	2*	2	1*	7		
		Life Orientation		2	2*	2	2*	8		
		Creative Arts		1	1(2)	1(2)	1*	4/6		
		2								
Further Education and Training (FET)	9	Home Language	40% CASS: 60% EXAM	3	3*	3	2*	11	Codes 1-7 Promotion: 4 in Home Lang 3 in FAL 3 in Maths 3 in any 3 other subjects 2 in any 2 other subjects Note 'No learner should stay in the same phase for longer than four years, except under exceptional circumstances.'	27.5
		First Additional Language		3	3*	3	2*	11		
		Mathematics		2	3*	3	3*	11		
		Natural Sciences		2	3*	2	3*	10		
		Social Sciences		1+1	2+2	1+1	1*+1*	10		
		Technology		2	2	2	2*	8		
		Economic Management Sciences		2	2*	2	1*	7		
		Life Orientation		2	2*	2	2*	8		
		Creative Arts		1	1	1	1*	4		
		2								
Further Education and Training (FET)	10-11	Home Language	25% CASS: 75% EXAM	4	3*	2	2*	11	Codes 1-7 Promotion: Obtain at least 40% (3) in Home Language Obtain at least 40% (3) in any two other subjects Obtain at least 30% (2) in any three other subjects	27.5
		First Additional Language		4	3*	3	1*	11		
		Mathematics or Mathematical Literacy		2	2*	2	1*	7		
		Life Orientation		2(1PET)	2*(1PET)	2(1PET)	2*(1PET)	8		
		Subject Choice 1		2	2*	2	1*	7		
		Subject Choice 2		2	2*	2	1*	7		
		Subject Choice 3		2	2*	2	1*	7		
		2								
		1								
		2								
Further Education and Training (FET)	12	Home Language	25% CASS: 75% EXAM	5	3*	1*	1*	10	Codes 1-7 Promotion: Obtain at least 40% (3) in Home Language Obtain at least 40% (3) in any two other subjects Obtain at least 30% (2) in any three other subjects	27.5
		First Additional Language		4	4*	1*	1*	10		
		Mathematics or Mathematical Literacy		3	2*	2*	1*	8		
		Life Orientation		2(1PET)	3*(1PET)	2*(1PET)		7		
		Subject Choice 1		2	2*	2	1*	7		
		Subject Choice 2		2	2*	2	1*	7		
		Subject Choice 3		2	2*	2	1*	7		
		2								
		1								
		2								

* Indicates that one of the assessments is an examination

The figures in the tables do not include the baseline testing or Annual National Assessments (ANA).

Figure 4.3 Summary of assessments

Source: Pinnock (2013)

4.8.5 From learning outcome and assessment standard (National Curriculum Statement) to topic and skill focus (Curriculum Assessment Policy Statement)

The CAPS documents do not all follow exactly the same format or layout. Although there seem to be common categories and headings, the way the information is presented differs from subject to subject.

Each subject is divided into topics and each topic into content outlines. This has replaced all learning outcomes and assessment standards.

There are some subjects, for example the languages, that refer to skills (e.g. listening skills, reading skills) rather than topics. There is an emphasis on competencies that must be demonstrated in the assessment tasks.

Tables 4.10 and 4.11 illustrate the difference in layout between the NCS and CAPS.

Table 4.10 Example of layout in the NCS: Grade 7

Learning Outcome 1	Assessment Standards
The economic cycle The learner will be able to demonstrate knowledge and understanding of the economic cycle within the context of “the economic problem”.	We know this when the learner: • Explains needs and wants, and how the differences between them impact on communities and the environment. • Describes the different types of business and activities within the primary, secondary and tertiary sectors. • Explains the concept “free” and economic (scarce) goods, and the influence of demand and supply on market prices.

Table 4.11 Example of layout in CAPS: Grade 7, Term 1

Week (2 hours per week)	Topic	Content
Weeks 1–3	The economy: history of money	Traditional societies; bartering; promissory notes; coins; paper money; electronic banking; role of money
Weeks 4–5	The economy: needs and wants	Basic needs of individuals, families, communities and countries; primary and secondary needs; unlimited wants; limited resources to satisfy needs and wants
Weeks 6–7	The economy: goods and services	Goods and services; examples of goods and services; producers and consumers; the role of households as producers and consumers; using goods and services efficiently and effectively; how to recycle and reuse goods to satisfy needs and wants
Weeks 8–10	Entrepreneur- ship: businesses	Formal and informal business; types of business (trading, manufacturing and service) that are both formal and informal; advantages and disadvantages of formal businesses as producers and consumers; the effect of natural disasters and health epidemics on formal and informal businesses

The CAPS documents provide guidelines on how much time should be spent on each topic and what content should be covered in that time. Some CAPS documents provide an outline annual teaching plan, which indicates the topics per term in sequence and how much time should be spent on them.

Table 4.12 Example of a work schedule (year plan) for Grade 10

Grade 10: Term 1		Week number								
Topics	Contexts focusing on numbers and calculations with numbers	1	2	3	4	5	6	7	8	9
	Contexts focusing on patterns ...									
	Contexts focusing on measurement ...									
Assessment	Assignment / integration									
	Control test covering ...									
Grade 10: Term 2		Week number								
Etc.										

Grade 10	2013
Subject: _____	Grade: _____
Time: _____	Number of learners in class: _____
Topic: _____	
Aims of the lesson: _____	
Theme / content / skill: _____	
Methods: _____	
Media / resources (LTSM): _____	
Assessment based on assessment guidelines: _____	
Formative (classroom and continuous): _____	
Summative (end / final): _____	

Figure 4.4 Example of a lesson plan for Grade 10

*Take note that this is an example only. Remember that each subject has its own CAPS document, and lesson plans will not be the same for all subjects.

It is important to reflect continuously on lesson plans and the delivery thereof to determine whether the implementation was successful, what worked effectively and what needs to be adapted, modified and improved. Teachers must note this information while the experience is still fresh in their minds, so that if necessary, they can adapt the affected part of the instructional design and planning for future implementation. It is advisable to record this reflection on the planning sheets.

4.8.6 Monitoring CAPS readiness and progress

The following questionnaire can be used by teachers, school managers and school evaluators as an assessment and monitoring tool.

Questionnaire for CAPS readiness and progress

- Does your school set goals for the learners?
- Is your school aware of the CAPS?
- Does your school have a good understanding of the latest documents and policies?
- Does the phase planning take place accordingly?
- How does the phase planning accommodate the needs of different learners?
- Does grade and lesson planning take place? How do the teachers participate in this process?
- Do the teachers follow the planning that they have set out? Explain how.
- How do the lessons and the various methodologies used address barriers to learning and provide opportunities for expansion?
- How sound is the knowledge of assessment techniques in your school?
- Are all teachers aware of the latest requirements for assessment? Is assessment carefully planned for? Explain how.
- Does your school implement intervention programmes? Describe how.
- Is internal moderation carried out? Explain the process.
- How is evidence of learners' work kept?
- Does the recording of assessment reflect the requirements of CAPS?
- Is record keeping accurate?
- What kind of feedback is given to learners?
- Are the external systematic tests and examinations carried out in the correct way and are the results an accurate reflection of the learners' abilities?
- What cocurricular activities are planned. How are they carried out and monitored in order to enhance teaching and learning?

4.9 CONCLUSION

This chapter focused on how to plan and design to narrow the gap between planning and practice. The selection and development of the appropriate learning, teaching

and support materials to enhance teaching and learning is deemed to be an important part of curriculum interpretation and implementation. Continuous reflection in education helps teachers to review the skills, knowledge and abilities they have gained.

The main aim of this book is to empower each teacher with the appropriate knowledge to enhance his or her ability to interpret the curriculum, plan instructional designs and implement (enact) the intended curriculum effectively.

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