CHAPTER 2

A REVIEW OF THE LITERATURE ON CURRICULUM DEVELOPMENT AND REFORM, WITH PARTICULAR REFERENCE TO SOUTH AFRICA

2.1 Introduction

Chapter 1 provided a rationale for the proposed research which is underpinned by national curriculum reform in South African education. Transforming a curriculum has implications for every dimension and role-player dealing with curriculum. Any attempt at changing curriculum practice in South African schools must be evaluated from the perspective of what the government is trying to achieve through its curriculum reforms. In turn, these curriculum reforms must be interpreted and critically evaluated from the broader perspective of curriculum theory. This chapter places the present research into context by first providing a working definition for curriculum as well as a brief overview of the major philosophical approaches to curriculum. This overview will highlight the reality of change and the issues driving change, which is not unique to South Africa, since it has been happening over decades.

The transformational outcomes-based education paradigm, which is embraced as the guiding paradigm for educational reform in South Africa, will be viewed from three different perspectives. The first two perspectives will be discussed in this chapter, while the third will be addressed in Chapter 3. The first perspective is a discussion of outcomes-based education as a *philosophy of education*, and the second as a curriculum framework and *system* that has been created as the vehicle for restructuring education in South Africa. The system referred to entails the National Qualifications Framework (NQF), Curriculum 2005 and other supporting structures like the National Standards Bodies (NSBs), The third perspective, which will explore some implications of *OBE in practice*, for *technology education* in particular, will be addressed in the Chapter 3.

2.2 Defining curriculum: Key dimensions and concepts

Up until now in this research, curriculum has been referred to as a general concept inextricably linked with education. It would be appropriate at this stage to clarify exactly what is meant by the term curriculum before continuing with any discussions on curriculum.

The concept of curriculum is elusive and epistemologically ill defined, because of the fact that education is everybody's business, from the lay person to educational scientists. Another factor contributing towards the problem of precise terminology is that there is not much agreement on where curriculum matters finish and where the rest of education begins. According to Pratt (1994:5) the acts of instruction, teaching and learning are not curriculum, for curriculum refers to plans or blueprints for instruction — but there are alternative interpretations of the concept.

By 1971, Rule (Lewy, 1991:26) had already identified 119 different definitions for curriculum which may be delineated against two extremes: specific and prescriptive versus broad and general (Ornstein & Hunkins, 1998:10). A linear, more prescriptive definition is that of Tom (1984:89), which is also in line with Tyler's (1958) and Taba's (1962) description, who define curriculum as a plan for teaching or instruction, while Pratt (1994:5) expanded the definition to "*a plan for a sustained process of teaching and learning*". A broader definition of curriculum is rooted in Dewey's (1938, 1975) explanation of the relationship between education and learner experiences. Shepherd & Ragan (Ornstein & Hunkins, 1998:9) assert that a curriculum "*consists of the ongoing experiences of children under the guidance of the school…(where) children achieve self-realization through active participation within the school*". The tendency to define curriculum in terms of experience, and not merely a plan, arose as a result of the feeling that what was planned in a written document, was not necessarily put into practice by means of experiences (Lewy, 1991:27).

Closer to home, Jansen (1984) also added his voice to the plethora of definitions. According to him "*a curriculum is a plan or a programme for teaching and learning prepared in the light of certain goals and which contains at least a reference to selected*

and sequenced learning content" (1984:90).

Within the context of this study, the working definition will include both the definitions as formulated by Van Rooy (1996) and the National Education Policy Investigation (NEPI, 1992). According to Van Rooy (1996:92) curriculum is defined as follows:

The curriculum is the interrelated totality of aims, learning content, evaluation procedures and teaching-learning activities and opportunities and experiences which guide and implement the didactic activities in a planned and justified manner.

According to the National Education Policy Investigation (NEPI, 1992:1-2) curriculum refers to *"the teaching and learning activities and experiences which are provided by schools"*. This definition includes the following components:

- The aims and objectives of the education system as well as the specific goals of the school.

- The selection of content to be taught, how it is arranged into subjects, programmes and syllabuses, skills and processes.

- Strategies for teaching and learning, as well as relationships between teachers and learners.

- The forms of assessment and evaluation which are used.

This definition of curriculum by NEPI brings together a number of different interests involved and necessary for effective and successful education. The interests are:

- The learning and development of individual learners.

- The nature of knowledge and developments in knowledge itself.

- The labour process of teachers, and their values and interests.

- The changing needs and interests of the broader society.

- The values, entitlements and requirements of citizenship in a particular society.

- The human resources needs of the economy (NEPI, 1992:2).

The only shortcoming in these definitions in terms of their suitability for the present South African education situation, is the absence of the concept "outcomes". Both of these definitions were formulated before the outcomes-based approach was national policy. Since outcomes are the point of departure in the curriculum design process, this concept should be included in the first sections of both of the definitions to stand alongside the terms aims and goals.

The next section will provide a backdrop in terms of educational philosophies which have guided curriculum development and change processes in this field.

2.3 Philosophical foundations of curriculum

The curriculum is central in the educational process and therefore the mission envisaged for education should be mirrored in curriculum endeavour. Many dimensions and directions of curriculum discourse have been described over the ages which differed paradigmatically from one another. Curriculum philosophies and actions were vested in the world view of a specific time slot in the course of history. Lovat & Smith (1995:11) agree that there is an underlying social, political and economical philosophy for each historical period which impacts on education and curriculum. As empires and governments rose and fell, so did curricula with their guiding paradigms rise and fall. The reason why education and consequently curricula are delicate terrain for covert power battles is best demonstrated by Bernstein's (1971: 47) much quoted statement:

How a society selects, classifies, distributes, transmits and evaluates the educational knowledge it considers to be public, reflects both the distribution of power and the principle of social control.

The quotation's reference to "distribution of power" activates age old, controversial issues which have tormented educationists and curriculum planners through the

decades. The NEPI Report (1992:2) also acknowledges the fact of a complex set of dynamic relationships associated with curriculum decisions when it states the following:

> *There are, therefore, important social and political dimensions to the curriculum. The way in which knowledge is organized in the school curriculum is a social activity which produces a social product. It is drawn up by particular groups of people; it reflects particular points of views and values; it is anchored in the experiences of particular social groups; and it produces particular patterns of success and failure. Viewed in this way, the curriculum can never be neutral or removed from patterns of power.*

The points made here are particularly relevant in the context of South Africa's current educational reforms which have a stated intention of changing patterns of power, patterns of success and failure and (some would say) the basic nature of South African society.

As a point of departure to introduce the vast field of curriculum, as well as patterns of transformation in this field, different **philosophical viewpoints** underpinning curriculum inquiry will be discussed. Major philosophical viewpoints in the field of education and consequently in curriculum have given meaning and have directed missions, decisions and actions in the field of education. Hopkins (Ornstein & Hunkins, 1993:35) stressed the importance and role of philosophy in curriculum, especially when being confronted with prominent change imperatives in education, when he expressed the following:

> *Philosophy has entered into every important decision that has ever been made about curriculum and teaching in the past and will continue to be the basis of every important decision in the future. There is rarely a moment in a school day when a teacher is not confronted with occasions where philosophy is a vital part of action. An inventory of situations where philosophy was not used in curriculum and teaching, would lead to a pile of chaff thrown out of educative experiences.*

If the different philosophies which have influenced and are still influencing curriculum thinking are considered, different classification schemes are possible. For the purpose of providing an overview in this research, a classification scheme will be used where the

major philosophies of education will be depicted along a continuum varying from the traditional to contemporary. At the far left are the liberal philosophies, reconstructionism and post-modernism, and at the far right the conservative such as perennialism, with progressivism and essentialism in between (Ornstein & Hunkins, 1993:61, Oliva, 1992:193 and Slattery, 1995:67-102). Figure 2. 1 represents this continuum.

Figure 2.1: Educational philosophies underpinning curricula
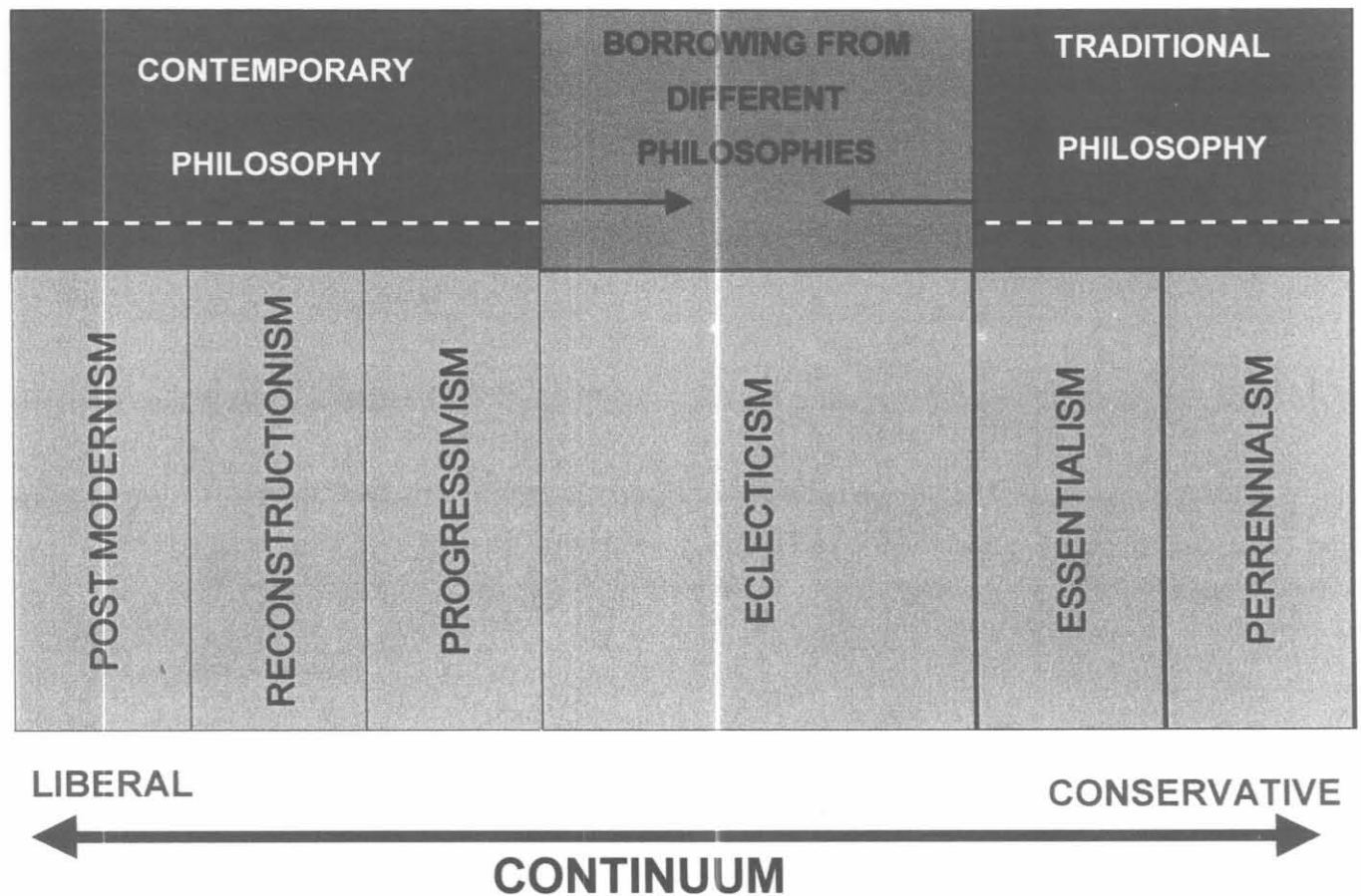
The following brief summaries of these philosophies highlight the major influence they had on curriculum. This background provides a position from which to interpret the recent curriculum reforms in South Africa.

2.3.1 *Perennialism*

Perennialism is the oldest of the educational philosophies. It is rooted in realism where the aims of education are seen as disciplining of the mind and the development of the

ability to reason. Therefore, true to the tradition of Plato and Aristotle, perennialist thinking focuses on that domain of the past which encompass universal, generally agreed upon knowledge. A highly academic curriculum consisting of the Quadrivium and Trivium was advocated with emphasis on the three R's, moral and theological studies and subjects such as geometry, Latin, Greek, grammar, rhetoric and logic (Oliva, 1992:195–196; Ornstein & Hunkins, 1993:40– 42 and Pratt, 1994:9). Hutchins (1963:18) who was a great spokesperson for perennialism stated the function of education to be the following:

> *The ideal education is not an ad hoc education, not an education directed to immediate needs; it is not a specialized education, or a pre-professional education; it is not a utilitarian education. It is an education calculated to develop the mind.*

To fulfil the function of education referred to in the quotation, the curriculum is **subject-centred** where the teacher is viewed as the authority and expert in the subject field. The dominating teaching methods entail lecturing, oral exposition and rhetoric (Ornstein & Hunkins, 1993:42).

2.3.2   Essentialism

From the 1930's to the year of Sputnik in 1957, essentiaslism emerged as the prominent and popular educational philosophy informing curriculum endeavour. This philosophy resulted in the curriculum being organised around cognitive and intellectual essentials which, therefore, explains the emphasis on the three R'S and other core academic subjects such as English, mathematics, science, history and a foreign language. Minor or "soft" subjects like art, physical education and music appreciation were considered as expensive fads taking up too much of the available educational resources (Ornstein & Hunkins, 1993:45).

Essentialism differs from perennialism in that although it also values essential subject matter, it is not rooted in the past only, but focuses more on contemporary issues while aiming to preserve the cultural heritage (Oliva, 1992:196). Essentialists find themselves in harmony with **behaviouristic principles** where the learner is cast into a passive role of receiving and responding to stimuli from the teacher (Cagné, 1985). The stimulus-

response relation encouraged didactical practices such as programmed instruction, drill, standardised tests, behavioural objectives and teaching machines which were popularised by Skinner (Oliva, 1992:197-198).

Although present day essentialists are more moderate than they were during the Sputnik years in that they provide to an extent for an individual's abilities and interests, a learner-centred approach is still strongly criticised. The reason being that *"the school is ... side tracked, from its original mission when it de-emphasises cognitive needs, and attends to the social and psychological problems of students"* (Ornstein & Hunkins, 1998:42).

2.3.3 *Progressivism*

In the early twentieth century, progressivism developed from pragmatism. This development was led by John Dewey with publications such as *Democracy and Education (1916)* and *My Pedagogic Creed (1929)* and maintained that it was time to subordinate subject content to the learner (Kanpol, 1995:368-369 and Oliva, 1992:198-199). Because of the pluralistic, changing nature of reality, Dewey did not see much need for focusing on a static body of knowledge like the perennialists and essentialists did. According to progressivist thought, the emphasis of learning was on **how** to think and not **what** to think (subject content). Therefore, learning strategies which could enhance effective learning were important and included problem-solving competencies and scientific inquiry (Ornstein & Hunkins, 1993:50 and Pratt, 1992:15).

Dewey (1902:7-14) explains the difference between the essentialist and possitivist curriculum as follows:

One school fixes its attention upon the importance of the subject matter of the curriculum as compared with the contents of the child's own experiences ... Subject matter furnishes the end, and it determines method. The child is simply the immature being who is to be matured; he is the superficial being who is to be deepened. ... It is his to receive, to accept.

Not so, says the other sect. The child is the starting-point, the center, and the end. Personality, character, is more than subject matter. Not knowledge or information, but self-realization, is the goal.

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Dewey did, however, state that just as he condemned old philosophies emphasising knowledge for its own sake, he attacks those who believe that knowledge had no or little value (Ornstein & Hunkins, 1988:50). Where the perennialist regards truth to be absolute and based in the past, the essentialist views truth as cultural heritage while the progressive pragmatist regards truth as relative, changing and incomplete (Oliva, 1992:200). Thus methods and tools for searching the truth become important – hence the reference to scientific method.

Scientific method: The progressivists viewed the scientific method as a means of fostering problem-solving competencies and reflective thinking which could be implemented in any area of human life. The scientific method, therefore, was both a means and an end. The consecutive processes which constitute the scientific method are: (a) identify a problem (b) form a hypothesis (c) collect data and information (d) analyse data and information (e) draw conclusions and deduce implications and (e) accept or reject the hypothesis (Evans, 1970:9).

Although the scientific method is a generally accepted method in problem-solving, it must be realised that it has it limitations as well in searching for new knowledge. Taba (1962:184) legitimately warned against using the scientific method as the only method to teach thinking and problem-solving when she stated:

> *Subsuming all reflective thinking under the category of problem solving has also caused certain elements of thinking to be neglected, especially those which, although involved in problem solving, are not fully attended to while solving problems. Among these are such mental processes as concept formation, abstracting, and various methods of induction.*

A summary of progressivist curriculum thinking is not complete without referring to both the relevant and humanistic curriculum.

The relevant curriculum:

During the 1960s curriculum development adopted a learner-centred approach as opposed to a subject-centred approach. It was argued that learners would take more responsibility, be more interested and actively involved in learning if classroom

experiences were to be built on real-life experiences (Black & Atkin 1996:35-36 and Doll, 1986: 24-25).

From the call for relevance emanated the following needs:

(a)   Revised and new courses incorporating learner interests and problems.

(b)   Educational alternatives, electives, mini courses and open classrooms.

(c)   Relaxation of academic standards and admission standards.

(d)   Individualisation of instruction by means of independent study and special projects.

(e)   Extending the curriculum beyond the four walls of the classroom by means of work-study programmes, credit for life experiences and off-campus courses.

The initial intention to recognise learners' needs was a good one but, as Oliva (1992:205) summarises *"there can be no doubt that some of the progressivist schools went to extremes to accommodate the needs and interests of children"*. Hence, the curriculum appeared disorganised and difficult to evaluate in comparison with the tidiness of the essentialist curriculum.

The humanistic curriculum:

As a reaction to what was viewed as an overemphasis on subject matter and cognitive learning, advocates for this view promoted the idea of humanising schools. This curriculum gained impetus with the growth of child psychology which deals with issues such as valuing, freedom to learn and personal fulfilment (Combs, 1982 and Ornstein & Hunkins, 1998). Advocates of the humanistic approach, such as Maslow (1962) and Rodgers (1983), contend that by attempting to be rational-scientific, schools miss the personal and social aspects of instruction, also ignoring the artistic, physical and cultural aspects of subject-matter (Ornstein & Hunkins, 1998:47). Affective outcomes along with cognitive outcomes are promoted by the humanistic curriculum.

Curriculum activities and teaching methods which are associated with this curriculum approach, include the following:

- Lessons based on real life experiences.

- Field trips and group projects.

- Artistic endeavours and dramatisation.

- Homework and tutoring centres.

- Co-operative, independent and small group learning as opposed to large group, competitive teacher-dominated learning (Ornstein & Hunkins, 1993:7-8).

Critics of the humanistic curriculum suggest that the drawback is its lack of attention to educational excellence and academic productivity (Oliva, 1992:206, Ornstein & Hunkins, 1993:8 and Pratt, 1994:17).

2.3.4   *Reconstructionism*

Branching out from John Dewey's philosophy (1902) which interpreted the function of education from both psychological and social view points, reconstructionism seeks not to simply transmit cultural heritage, or to study social issues, but to involve **schools as change agents** in solving political and social problems (Oliva, 1992:194 and Pratt, 1994:11). Pinar (1988:v) describes the alternative, reconstructed view of the curriculum field as follows:

> *The field of curriculum has undergone an enormous change – a reconceptualization if you will – during the past twenty years. From a field concerned with the development and management of curriculum it has evolved into a field more concerned with scholarly understanding of several dimensions of curriculum. These dimensions include issues of development and management; however, these are explored through political, gendered, phenomenological, and other means.*

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Pinar (1988:xii-xiii) continues to explain the interests and main focus of reconceptualist theorists as follows:

> *The reconceptualists tend to concern themselves with the internal and external experiences of the public world. They tend to study not "change in behavior" or "decision making in the classroom", but matters of temporality, transcendence, consciousness, and politics.*

Reconstructionists are of the opinion that this philosophy is appropriate for a society in crisis. According to reconstructionist thinking, teachers are the vanguards for a better, new social order (Ornstein & Hunkins, 1998:55, Oliva, 1992:193 and Pratt, 1994:11-16). As for the curriculum, reconstructionists place emphasis on content that represents controversial national and world problems and social issues such as unemployment, poverty, housing, and health needs, as an attempt to solve these global concerns (Oliva, 1992:194).

2.3.5   Post-modernism

The post-modernists contend that curriculum cannot be pinned down to one entity and context, because they abandon the ideas of unity, certainty and predictability. They see the world and therefore curriculum to be emergent, fluid, chaotic, open and pluralistic. Post-modernism acknowledges the construction or birth of new meanings from the chaotic deconstructed pool of knowledge (Constas, 1998 and McLaren & Hammer, 1989). According to Slattery (1995) modernists fragmented knowledge into discrete and separable building blocks of information and thus destroyed meaning. The danger of fragmentation, Bohm (1990:1-2) warns is the following:

> *Fragmentation is now very widespread, not only throughout society, but also in each individual and this is leading to a kind of general confusion of the mind, which creates an endless series of problems and interferes with our clarity of perception so seriously as to prevent us from being able to solve most of them.*

> *Thus art, science, technology and human work in general, are divided up into specialities, each considered to be separate in essence from the others.*

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Becoming dissatisfied with this state of affairs, men have set up further interdisciplinary subjects, which were intended to unite these specialities, but these new subjects have ultimately served mainly to add further separate fragments....

Post-modern thinking tries to restore meaning and the demolition of *"Pink Floyd's wall that separates bricks of truth and virtue, values and facts, curriculum and social justice"* (Steinberg & Kincheloe, 1995:xi). Post-modernists are concerned with **affectiveness, problems, emotions** and **uncertainty**, while modernists are concerned with **effectiveness, rationality** and **measurable certainty.** Theorists like Burbules & Rice (1991), Giroux (1992,1993,1994), Kanpol & McLaren (1995), Kincheloe & Steinberg (1993), Peters (1995) and Slattery (1995) have portrayed the problematic issues regarding multi-realities and diversity in the post-modern era of education. Kanpol (1995:360) argues that *"school clientele (students and teachers) can no longer rely on singular truth or one reality for knowledge"*. Oliver & Gershman (1989:7) stretch this argument on post-modern multiple realities as opposed to traditional realities even further where they explicate that:

We are at the end of an age, so that its metaphors and symbols no longer explain where we have been nor inform us about what next to do.

In a post-modernist curriculum the following characteristics are revealed which have a practical impact on curriculum development and implementation (Spector, 1993:9-19 and Hellemans, 1989:100):

- A reduced amount of content loaded with detail. A basis for general formative education is focused on the mastering of general competencies and fundamental relationships in life.

- The rigidity of traditional subject content is repealed in favour of the immediate supple integration of any new knowledge and/or processes in the curriculum to make it immediately relevant.

- Traditional disciplinary boundaries will be blurred in favour of integration, co-ordination and inter-relatedness of concepts. The emphasis is on holistic concepts

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and conceptual frameworks.

- Science will be portrayed as a dynamic field challenging established truths. Scientific activity is regarded as a human activity which is responsive to human and societal perceptions and needs. Science is no longer viewed as mechanistic, impersonal and ultimately objective.

- Because of the integrated and inter-related nature of reality, content will rather be organised around themes and problems, than around the structure of a single discipline.

- The curriculum will be sensitive to the values of multiple cultures, races, males and females and will allow for different learning styles.

- The curriculum will devise co-operative and collaborative learning experiences which will discourage a teacher-centred and teacher-dependent attitude. It implies a break away from a textbook and lecturing approach to an activity-based, hands and minds on approach.

- The curriculum will focus on open-ended inquiry and communication, rather than drill and practice.

These characteristics also show a very strong resemblance to the characteristics of transformational outcomes-based education, which will be discussed in detail in Section 2.4.1 and 3.2.

This overall discussion has shown that curriculum can be viewed from various perspectives and that curriculum foundations are not static, nor separate and isolated. The following comment made by Slattery (1995:152) summarises the fundamental ideas of post-modern curricula:

Curriculum .... in the postmodern era emphasizes discourses that promote understanding of the cultural, historical, political, ecological, aesthetic, theological, and autobiographical impact of the curriculum in the human conditions, social structures, and ecosphere rather than the planning, design,

implementation, and evaluation of context-free and value-neutral schooling events and trivial information.

2.3.6   An eclectic approach to educational philosophy

The principle of an eclectic approach to educational philosophy, ties in closely with the discussion on post-modernism in the previous section. As indicated in Figure 2.1, eclecticism refers to the idea of borrowing of beliefs from one or more of the existing philosophies depending on the context and aim of a particular philosophy. Kanpol (1995:359-360) confirms the fact that no single educational philosophy may be considered static and complete when dealing with education.

The short overview of educational philosophies influencing curricula, attempted to show that change is not a characteristic of the current times only - it has been happening through the ages. It is also not unique to the South African context. This background discussion must be kept in mind when the changes taking place in South African education are discussed in the second part of this chapter. It only serves as an informative background against which to orientate, interpret, analyse and scrutinise innovations evolving in the educational field of curriculum inquiry in the modern day and age, also in South Africa.

2.4   A new paradigm for the restructuring of education in South Africa

This section will explore the philosophical paradigm which has immediate and far reaching implications for curricula in the education and training sectors of this country.

2.4.1   Introduction of the new paradigm evolving in South African education and training

Although not an official member of the Organisation for Economic Co-operation and Development (OECD), South Africa faces the same concerns regarding the state of education and training as all the OECD member countries about which the following was

stated in a joint curriculum reform report (Black & Atkin, 1996:ix):

[They are concerned about the] relative failure of their respective workforces to cope with changing economic realities and to compete on world markets. This concern has led to a re-examination of the aims and objectives of education, and, subsequently, to reform of curriculum and assessment.

This, according to Lovat & Smith (1995:10-11), is probably no accident because at times of economic crisis or downturn such as the late 1890s, 1930s, 1980s, and currently, discussions about curriculum tend to *"focus on questions of specifying clear objectives in outcome terms that can be tested by nationally established performance indicators".* They continue their argument by saying that when the economy is strong, jobs plentiful and people are well off in terms of material goods, there is little concern over education and what schools are doing. However, when economic conditions worsen, concerns are raised about a country's ability to compete on world markets and their young people being unemployed.

South African decision makers, practitioners, managers and other stakeholders have taken the view that in order to achieve significant levels of economic growth and to become internationally competitive, the quality of education and training had to be drastically improved before it could meet the country's needs. The National Department of Education (1997e:10) argues that the South African economy

serves here as a good example where changes in the relative contribution of the various economic sectors have serious implications for a future curriculum. For instance a decrease in the primary sectors from 45% during the 1910 to 1920 period, to 15,1% in 1990, and an increase in the industrial sector from 8% over the period 1910 to 1920, to 32,1% in 1991, have major implications for employment patterns in the longer term because a different set of work force competency is demanded.

To adhere to the demands of realities sketched in the quotation, new curricula must not ignore the fact that the **knowledge** and **skills base** of the learning, working and unemployed population has to be massively upgraded. The previous apartheid system though, did not provide all South African learners with opportunities for personal

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development and empowerment, resulting in the failure to provide the country with a large, **productive and skilled work force** needed to match the needs of employment (HSRC, 1995:6). The education system as it was before 1994 could be regarded as a cornerstone of apartheid between the White, Black, Coloured and Asian races. In 1953, the Bantu Education Act imposed separate education systems for the different racial groupings, with strong state control. The Act regulated access to schools, grade 12 exit level examinations and partly different subject syllabi for history and literature for the different cultural groups. A strong top-down system was maintained, based on traditional curriculum philosophies which were described in Sections 2.3.1, 2.3.2 and 2.3.3.

The belief that South Africa needed **national standards** for education and training grew in the late 1980s and was induced by a range of influences. The main internal driving forces can be summarised as follows:

- *Counteracting the former system:* A need existed to abolish the consequences of previous curricula in terms of outcomes, content, curricular structure, access to education, teaching and assessment strategies. The New South Africa is committed to democracy where equal learning opportunities are available.

- *Bridging the gap between education and training:* A need existed to abolish the idea that education which was more academically orientated was superior to training which was labour orientated. Labour organisations have pushed for an integrated system of education and training.

- *Preparing South Africans for the 21st century:* The reality of globalisation and changes in work organisation must be addressed through new curricula.

These major driving forces will be described in more detail in the discussion below. Different influences stimulating the direction towards national standards came from a diversity of backgrounds and priorities. Some of the prominent influences and challenges included the following:

- The need to create an equitable system of education and training which serves all South Africans well. Such a system would need to accommodate those learners in conventional schools, colleges and training programmes, as well as the needs of

learners who have not enjoyed formal education and training.

- The anticipation of major changes in society which required new ways of organising instruction in order to establish a working democracy – not least the "production of knowledge".

- Increasing dissatisfaction in trade, industry and labour because the education and training systems were far behind their international counterparts. There was an urgent need to provide workers with the competencies required in a technologically demanding global economy, with rapidly changing forms of work demanding multi-skilled workers.

- International trends where the received Western curriculum was being challenged by demands for greater modern relevance and accountability, and thus for national standards which would encourage the achievement of outcomes. Focusing on the demand of accountability, the document Draft Recommendations for the Development and Implementation of Assessment Policy (Department of Education, 1997c:9) argues that

> since the 1980s there has been an increased demand from taxpayers and funders for visible monitoring and accountability ... Margaret Thatcher and Ronald Reagan, have played a leading role in this movement, insisting on value for money and measurable outcomes....With large proportions of national budgets devoted to education, demands for increased accountability have led to systematic and regular assessments, both of individual learners and of the overall education system [systemic evaluation] in countries which previously did not have these features.

- Frustrations caused by complex and disarticulated systems of certification that created artificial barriers to progress in learning and work.

- Findings, particularly in the evaluation of adult education, indicated that programmes were lacking in direction, purpose and status and therefore failed to provide substantive benefits for learners.

- Overemphasis on the learning of information rather than the ability to access and utilise it. The lack of ability to apply critical thinking and problem-solving skills and to transfer skills to different contexts.

- An artificial and exaggerated divide between academic-theoretical and vocational-practical learning, where academic study is generally perceived to be of higher status.

- Inadequate general education combined with narrow vocational training delivering individuals lacking the ability to adapt to a rapidly changing economy (Department of Education, 1997c:7-9; HSRC, 1995:5-6, SAQA, 1997:2 and Department of Education, 2000b:12-13).

To address these problems and set reform in motion, the South African government accepted OBE as the mechanism for reform for the very reason to address the broad political, socio-economical and vocational issues mentioned above. Not only in South Africa, but also in other countries, such as different states and districts in the United States, as well as in Canada, Australia and New Zealand, attempts have been made to reengineer the traditional education systems according to OBE principles. Also in Europe, OBE serves as a popular approach to initiate reform. In the Netherlands, as well as Flanders, former curricula are redesigned to include "*eindterm*" or "*kerndoelen*", which are outcomes (De Corte, 1999:8).

It is important to note that outcomes-based education has many different forms. For example, Spady (1994a,b) distinguished between three broadly defined approaches, namely the traditional approach, transitional approach and the transformational approach.

Traditional OBE: In traditional OBE, the existing curriculum is the starting point to formulate outcomes, rather than the other way around. Just like objectives, outcomes are directly derived from the existing syllabus content in traditional subjects. Educational planning and implementation, in other words, are based on subject matter categories, also referred to as a disciplinary approach. There is no clear picture of the long-term outcomes of learning or of how they relate to each other in society. These outcomes are therefore not generalisable to other Learning Areas or contexts outside of school (Spady,

1994a:18-19).

Transitional OBE: In transitional OBE educational planning and implementation focuses on higher order competencies and their role in connecting and potentially integrating unconnected, content-focused curriculum areas. The term "interdisciplinary" characterises this approach (Spady, 1994b:193). Less emphasis is given to particular kinds of knowledge and information. Curriculum design processes start with outcomes and not with the existing syllabi in mind. These outcomes are *"relatively complex… are generalizable across content areas and require substantial degrees of integration, synthesis, and functional application"* (Spady, 1994a:19).

Transformational OBE: When the curriculum is designed around long-term outcomes related to the future life-roles of learners, it is said to be transformational (Spady, 1994a). South Africa has opted for transformational OBE, which is the most radical and perhaps complex of the three types. According to this type of OBE, the existing education system and curriculum, impede the development of a new society and do not meet the long term, real life needs of the learners. In South African society, where there is a strong push for rapid social change, transformational OBE seemed to be the most attractive option. This approach has very similar tendencies and aims with education as the reconceptualist education philosophy which was described in Section 2.3.4. The critical outcomes, which will be treated in detail in Section 2.4.3.2, describe the package of competencies in terms of knowledge, skills, attitudes and values which learners will need to be lifelong learners. No thought is given to the old curriculum whatsoever. Spady (1994a:19) emphasises that transformational outcomes *"require the highest degrees of ownership, integration, synthesis, and functional application of prior learning because they must respond to the complexity of real-life performances"*. Spady (1998:26-27) makes it very clear that these outcomes are significant performance abilities and not just content, scores, averages, percentages or credits. Spady (1998:26) is adamant that these outcomes must drive curriculum, not the other way around.

To make the OBE approach a practical reality, a system was created as a vehicle to operationalise the new approach. From the challenges, demands, and problems mentioned earlier, a prominent need developed to make education and training more flexible, efficient and accessible as was suggested by the Department of Education (1995a:15):

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Successful modern economies and societies require the elimination of artificial hierarchies, in social organisation, in the organisation and management of work, and in the way in which learning is organised. They require citizens with a strong foundation of general education, the desire and ability to continue to learn, to adapt to and develop new knowledge, skills, and technologies, to move flexibly between occupations, to take responsibility for personal performance, to set and achieve high standards, and to work cooperatively.

The idea being proposed for transforming education and training in South Africa envisages the integration of education and training into a **single, coherent** and **unified approach** to make it possible for all learners to achieve national qualifications through a variety of mechanisms and delivery systems: This integration principle is to be achieved by means of the **National Qualification Framework (NQF)** (HSRC, 1995:5-6 and SAQA, 1997:2). It is to this aspect that the discussion now turns.

2.4.2 The shaping of the National Qualifications Framework

Through extended contestation, policy formation, debate and research in the early 1990s, the concept of a National Qualification Framework (NQF) emerged. The NQF is a systematic way of describing the way in which the South African education system will be structured, and a mechanism by which all qualifications can be standardised and registered. As in England, Scotland and Australia, the NQF has its origins in the industrial, service and labour sectors. In South Africa, the concept of a NQF was notably developed by the initiatives published in the following documents:

- The Education Renewal Strategy (ERS, 1992) and a Curriculum Model for South Africa (CUMSA, 1993).

- The National Education Policy Investigation (NEPI, 1992).

- The National Training Strategy Initiative from the National Training Board (NTB, 1994).

- The Implementation Plan for Education and Training (IPET, 1994).

- The Centre for Education Policy Development (CEPD, 1995).

The above-mentioned documents contributed intensively towards the publication of the White Paper on Education and Training on 28 February 1995, which spelt out that

an integrated approach to education and training, linked to the development of a new National Qualifications Framework (NQF) based on a system of credits for learning outcomes achieved, will encourage creative work on the design of curricula and the recognition of learning attainments wherever education and training are offered (Department of Education, 1995b:15).

From the quotation it becomes apparent that national standards, which will be formulated as learning outcomes are inextricably linked to the NQF in that the standards will be housed within the NQF after registration by the South African Qualifications Authority (SAQA) (Department of Education, 1995b:12). SAQA with its developmental and management role of the NQF, will have to assure that the vision of the NQF is actualised by means of the principles underpinning the NQF. The underpinning principles will be addressed in the next section.

2.4.2.1 The vision of the NQF and key principles underpinning the NQF

Guiding the transformation in the sphere of education and training is a vision of **lifelong learning** for all learners (HSRC, 1995:10). Lifelong learning in this particular frame of reference has a more technical meaning in the sense that learners should have access to a variety of learning opportunities. It means that learners must be able to decide when, where and how they want to study and they must be able to progress readily between various areas, levels and providers of learning.

Using lifelong learning as a point of departure when discussing learning progression, means that learners will not be locked into one learning compartment or another. While learning through a variety of mechanisms and a multiple delivery systems, learners take with them recognised credits for learning that has already taken place – called

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recognition of prior learning (RPL).

The vision of lifelong learning should not only be interpreted on a technical level, but it should also be envisaged on a meta-level by every person and organisation involved in education and training. This meta-vision implies that curricula and learning programmes should empower learners to become competent learners who reflect knowledge, skills, attitudes and values, which are necessary to set in motion and sustain **a culture of lifelong learning**. As situations and demands change, competent learners will be able to exert control over their own learning. General competencies, as opposed to task specific competencies, which do not depend on content as such, are **transferable** from one context or problem situation to another. The result being a **flexible** learner, worker and citizen who can adjust effectively to changing personal and career needs.

The vision of lifelong learning will become a reality only when the NQF is guided by the following set of principles developed after intensive research by the National Training Strategy Initiative. This set of principles is reflected in Table 2.1 and is drawn up from two documents, *"Ways of seeing the NQF"* (HSRC, 1995:91-93) and *"Outcomes-Based Education in South Africa"* (Department of Education, 1997e:14-15).

Table 2.1: **Principles underpinning the National Qualifications Framework**

PRINCIPLE	THE NATIONAL QUALIFICATION FRAMEWORK MUST:
Integration	establish the basis for an **integrated approach** as part of a human resources development policy aimed to integrate theory (academic) with the practical (vocational).
Relevance	**be** and **remain responsive** to national economic, social and political development needs.
Credibility	have national and international **value** and **acceptance.**
Coherence	work within a **consistent framework** of principles and certification which allows learners to link credits into a meaningful learning or career pathway.
Flexibility	allows for **multiple pathways** leading to the same learning ends.
Legitimacy	provide for the participation of **all national stakeholders** in the planning and co-ordination of standards and qualifications.

Access	provide **ease of entry** to appropriate levels for all prospective learners in a manner which facilitates progression.
Progression	ensure that the framework of qualifications permits individual learners to **move through** the **levels** by accumulating appropriate combinations of credits.
Portability	enable learners to **transfer** their **credits** from one context to another.
Articulation	provide for learners, on successful completion of accredited prerequisites, to **move between components** of the delivery system.
Recognition of prior learning	through assessment, give **recognition to learning** which **has already been acquired** in different ways, e.g. through life or work experiences.
Guidance of learners	provide for the **counselling** of learners by individuals who meet nationally recognised standards for education, training and development practitioners.

The NQF with its vision of lifelong learning underpinned by guiding principles will serve to encourage the creation of new and flexible curricula, to promote quality learning standards and to monitor and regulate the quality of qualifications.

2.4.2.2 The structure of the National Qualifications Framework

In the traditional, formal school system, **core curricula** featured and although goals, aims and objectives were stated as points of departure, core curricula were content-based. This means that core curricula were organised in terms of prescribed and/or elective subjects which were offered at specific stages (age groups) for fixed periods of time, in a particular institution of learning. Learners' progress from one standard to the next depended on the extent to which learners had mastered the required subject content. Continuous assessment took place at various points during the year and finally at the end of a year in formal summative year-end examinations (Department of Education, 1995e:5).

The NQF together with Curriculum Frameworks differ from the core curriculum model and brought a completely new dimension to curriculum and programme development and management. Curriculum Frameworks may be regarded as philosophical and organisational frames of reference with the following main functions and implications for curriculum endeavour:

- They provide norms and standards for curriculum development and design. They do not prescribe content to be mastered.

- They spell out principles for curriculum development and design.

- They provide guidelines for organising teaching and learning.

- They specify essential, generic outcomes for teaching and learning.

- They describe the areas or fields of learning which are regarded as essential for teaching and learning.

- They suggest approaches to be adopted in evaluating learner progress or assessing learner outcomes.

- They create opportunities for innovation in that they allow for the development of flexible, relevant learning programmes which will take into account the particular needs, constraints and realities of a particular group of learners, thus contextualising learning. The term "learning programmes" is defined as consisting of competencies specific to a Learning Area (specific outcomes), as well as possible learning materials and methodology by means of which learners may achieve predetermined learning outcomes.

Although learning providers, normally operating from a provincial level, have the mandate to develop learning programmes which contextualise learning outcomes in selected content areas, it is desirable to **identify common key elements of the basic context** at a national level. The reason is a practical one. Learners who move between provinces must follow broadly similar programmes in terms of *"the general coverage of concepts and content, for example in Mathematics, Geography or History"* (Department Education, 1995b:48). The details of themes and actual content can be decided on at provincial level (Department of Education, 1997b:3 and Department of Education, 1995b:5).

With the broad functions of the National Qualifications Framework and other Curriculum Frameworks in mind, the structure of the NQF underpinning all Curriculum Frameworks

will be discussed now. The NQF is an eight level qualification framework with three distinguishable bands. Figure 2.2 depicts the three bands, levels and sub-levels, as well as learning providers at various levels.

Figure 2.2: A proposed structure for National Qualifications Framework

NQF LEVEL	Band	Types of Qualification and Certificates	
8	Higher	Doctorates Further Research Degrees	
7	Education	Higher Degrees Professional Qualifications	
6	and	First Degrees Higher Diplomas	
5	Training Band	Diplomas Occupational Certificates	
Further Education and Training Certificates			
4	Further Education	School/College/Training Certificates Mix of units from all non-governmental organisations	
3	and	School/College/Training Certificates Mix of units from all non-governmental organisations	
2	Training Band	School/College/Training Certificates Mix of units from all non-governmental organisations	
General Education and Training Certificates			
1	General	Senior Phase	ABET Level 4
	Education	Intermediate	ABET Level 3
		Phase	ABET Level 2
	and	Foundation Phase	ABET Level 1
	Training Band	Pre-school	• Formal schools • Occupation/Workbased training • Churches/Night schools Non- governmental organisations

- *The first band: The General Education and Training band* **(GET)**

This band represents 9 years of compulsory education, ranging from grade 1 to 9. Two distinct sectors present themselves in this band. The one sector is formal compulsory education, consisting of the Pre-school Phase (grade 0), Foundation Phase (grade 1-3), the Intermediate Phase (grade 4-6) and the Senior Phase

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(grade 7-9), culminating on level 1 after completion of grade 9. Curriculum 2005 is the national curriculum which is currently being implemented and phased in this band. The other sector is Adult Basic Education and Training (ABET) which also culminates on level 1 on the NQF. ABET comprises of ABET sub-levels 1 to 4. When exiting level 1, the qualification obtained is referred to as a General Education and Training Certificate (GETC).

- **The second band: Further Education and Training (FET)**

This band proceeds from level 2 through to level 4, which may be compared with grade 10 to grade 12. When exiting level 4, the qualification obtained is referred to as a Further Education and Training Certificate (FETC).

- **The third band: Higher Education and Training (HET)**

This band comprises of levels 5 to 8. Various types of qualifications such as certificates, advanced certificates, diplomas and degrees may be registered on these levels.

As mentioned in earlier paragraphs, nationally agreed-upon outcomes are formulated for the compulsory school years from grade 1 to 9, as well as assessment criteria which will assist an educator in determining whether outcomes have been attained. In the FET and HET bands, qualifications may be registered either as "whole qualifications" (e.g. a BA) or in terms of an approved grouping of components known as unit standards. The format of unit standards will be attended to now.

(i)   Unit standards

A unit standard is the smallest entity registered and assessed on the National Qualifications Framework on a specific level. A unit standard is outcomes-orientated and is expressed in terms of learner capabilities such as knowledge, abilities, skills and attitudes that are to be demonstrated by individual learners. To each unit standard an amount of **credits** is allocated which a learner can accumulate when he/she can demonstrate the mastering of an outcome formulated in a unit standard. A unit standard is *not* a conventional list of content items (HSRC, 1995:16).

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The purpose of a unit standard, according the SAQA Act (number 0208/96) (SAQA, 1997:8), is to provide

- a learner's guide document

- an assessor's document, and

- an educator's guide for developing and preparing learning material.

A unit standard should include the following information to serve its purpose :

- A unit standard title.

- A South African Quality Authority approved logo.

- A unit standard number.

- A unit standard level on the NQF.

- The credit which may be obtained after mastering the outcomes formulated in the unit standard.

- The field (context) and sub-field of the unit standard.

- The issue date.

- The review or expiry date.

- Purpose of the unit standard.

- Prior learning assumed to be in place before the unit standard is commenced, also called entry assumptions.

- Specific outcomes, which are contextually related and which will be assessed.

- Assessment criteria as well as embedded, underpinning knowledge, which might *inter alia* include background knowledge, cognitive frameworks, assumptions and values essential for completion of the unit standard.

- Range statements as a general guide for the scope, context, degree of complexity and level being used for this specific unit standard.

- Accreditation and moderation processes which had as its purpose the enhancement of credibility and principles such as portability and mobility, thus assuring that a "standards drift" does not occur across different assessment sites.

- A notes category which refer to the following information:

  - A statement indicating all the **critical cross field outcomes** which may be actualised by this particular unit standard. It must be mentioned that critical cross field outcomes underpin the whole NQF and every unit standard should strive for the actualisation of as many as realistically possible critical cross field outcomes.

  - Essential **embedded knowledge** should be addressed in this section if it has not been addressed under the category of assessment criteria.

  - May include any other **supplementary information** on the unit standard, for example it may refer to all the other specific outcomes which are supported by this specific outcome (HSRC, 1995:68-77 and SAQA, 1997:9).

Since unit standards are the smallest entities which may be assessed, they are also the smallest entities which contribute to the accumulation of credits by a learner. The free accumulation of credits though, must not lead to learners finding themselves with pointless collections of credits with no linkage to possible qualifications and high priority needs of society, industry and economy. This free-market approach to culmination of credits necessitates thorough reflection on the relationship between unit standards, credits and the construction of qualifications.

(ii)   The relationship between unit standards, credits and qualifications

The building components of qualifications are indeed unit standards, while unit standards

describe the specific context related outcomes to be achieved by a learner. As learners meet the criteria which indicate that they have mastered specific outcomes described in a unit standard, they accumulate credits towards a specific qualification. When they have collected the **minimum number** and **combination** of credits, they have achieved the defined degree of competence in a particular field or Learning Area and receive a qualification (Department of Education, 1996a:26). A qualification has been defined by The SAQA Act (SAQA,1995, clause1:viii) as follows:

Qualification means the formal recognition of the achievement of the required number and range of credits and such other requirements at specific levels of the NQF as may be determined by the relevant bodies registered for such purpose by SAQA.

The following figure illustrates the **relationships** between the relevant concepts as shown in Figure 2.3:

Figure 2.3: **The relationship between qualifications, unit standards and outcomes**
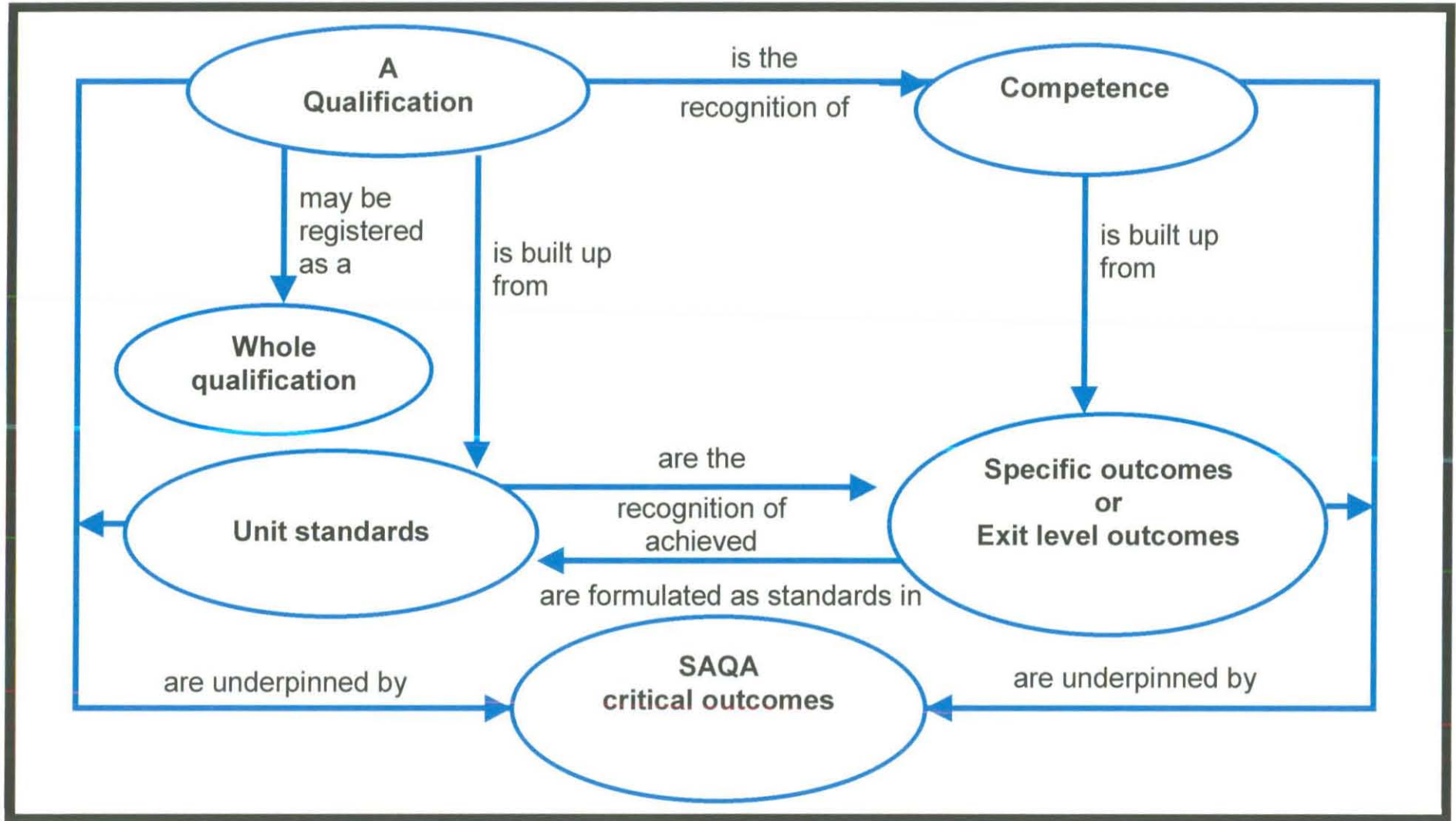
Different qualifications may be constructed by clustering combinations of registered unit standards on different levels. Each unit standard will contribute towards a specific amount of credits needed for different types and levels of qualifications. It is important to note that whole qualifications, which are not broken down in unit standards, may also be registered on a NQF level as was mentioned earlier. This is the main route which have been taken by South African universities who deliver whole qualifications already. The type and level of qualifications will be determined on the basis of the total number and levels of credits required in accordance with the following criteria (SAQA, 1997:15-16):

National Certificate: A minimum of 120 credits are needed of which 72 of the credits shall be at or above the level at which the certificate is registered on the NQF.

National First Diploma: A minimum of 240 credits are needed of which a minimum of 72 credits shall be at level 5 or above on the NQF.

National First Degree: A minimum of 360 credits are required of which a minimum of 72 credits shall be at level 6 or above on the NQF.

The South African Qualifications Authority (SAQA) has accepted

> *a credit system on the basis of one credit equalling 10 notional hours of learning, motivated in context in each case (SAQA Act, Decision 0209/96, 1995:10).*

For a National Certificate requiring a minimum of 120 credits, a learner will roughly need 1 200 hours of learning time, including contact teaching, individual study and practice. One credit is equal to ten notional hours of learning. The relationship between unit standards, qualifications and the accreditation system will have to be operationalised within generic broad fields of learning. It is the classification of these broad learning fields which will be addressed in the following paragraph.

2.4.2.3 Organising fields and Learning Areas

The National Qualifications Framework is divided into twelve organising fields which are

the key elements of the organisational mechanism of the NQF. The purpose of the organising fields is to enable the standards setting process (SAQA, 1997:8). Since these fields may be viewed as representative of the categorical structure of the real life world, they are based on a hybrid of both subject disciplines and occupational areas. Since these serve as organising tools for the NQF, they are labelled "organising fields" (SAQA, 1997:8).

The final 12 organising fields identified by SAQA, as well as possible sub-fields as categorised by the Human Science Research Council (HSRC, 1995) are given in Table 2.3.

Table 2.2:   The organising fields and sub-fields

12 ORGANISING FIELDS	SUB-FIELDS
1 Agriculture and nature conservation	Agriculture, forestry, fisheries, horticulture, nature conservation
2 Culture and arts	Visual arts Performance arts: stage, musical, etceteras
3 Business, commerce and management studies	Financial, administration, commercial practice, property, marketing, leadership, management, supervision
4 Communication studies and language	Communication Languages
5 Education, training and development	Education, training and development
6 Manufacturing, engineering and technology	Design, construction, maintenance, production and manufacturing Mobile equipment and materials handling
7 Human and social studies	Histories, geographies/economics, individuals, societies Religions
8 Law, military science and security	Law, military science and security
9 Health sciences and social services	Medical and dental (animal, human) Sport, recreation, food and nutrition, fire and safety
10 Physical, mathematical, computer and life science	Pure and applied mathematics, computer studies, life sciences. All other natural sciences

11	Services	Hospitality and tourism, beauty technologies, publishing and binding, information storage and archiving, wholesale and retail
12	Physical planning and construction	Architecture, building and construction.

(SAQA, 1999b:5, SAQA, 1997:8 and HSRC, 1995:60-61)

Emanating from the 12 organising fields are the **eight Learning Areas** which will organise learning in the Senior Phase and the Further Education and Training (FET) Band. These Learning Areas have been collapsed into five Learning Areas for the Intermediate Phase, and further into three Learning Areas for the Foundation Phase. The following table indicates the Learning Areas which will be implemented in the different phases, as well as the notional time, expressed as a percentage, which has been allocated to each learning area by the central Department of Education. It will be noted that a percentage for "flexible time" has been built into the allocation of notional times, to allow for flexibility where time is needed for inter alia more enrichment or remedial work in a specific Learning Area or even for school or other institutional activities.

Table 2.3:   The learning areas for the General and Further Education and Training bands

Learning areas	Notional time
Foundation Phase	
1 Literacy	25 %
2 Numeracy	25 %
3 Life skills	25 %
– Flexible time	25 %
Intermediate Phase	
1 Language, literacy and communication	35 %
2 Mathematical literacy and numeracy	15 %
3 Natural sciences and technology	15 %

4	Human, social, economics and management sciences	15 %
5	Arts and culture, life orientation	15 %
	– Flexitime	5 %
Senior Phase and Further Education Band		
1	Language, literacy and communication	20 %
2	Mathematical literacy and mathematical sciences	13 %
3	Natural sciences	12 %
4	Life orientation	10 %
5	Technology	10 %
6	Human and social sciences	10 %
7	Economics and management sciences	10 %
8	Arts and culture	10 %
	– Flexitime	5 %

(Department of Education, 1997a:11 and Department of Education, 1997b:1-3)

The latest report of the Review Committee on Curriculum 2005 which was released on 31 May 2000, will be handed to the Minister of Education Professor Kader Asmal. This report recommends that the eight Learning Areas should be reduced to six (languages, science and technology, social sciences, arts and culture and life orientation) with three learning programmes in the Foundation Phase and six in the Intermediate and Senior Phases (Executive Summary on Curriculum 2005, 2000:4-5). Since these are recommendations which the Minister will still have to react upon, this study will not address or comment on the emerging issues.

It was proposed by SAQA that qualifications in the FET band (level 2-4), comprise of 120 credits. SAQA also stipulates that that the 120 credits shall be divided into three categories of learning, namely fundamental, core and elective. These three categories will each carry a number of credits from the different Learning Areas, as indicated in the following tables (Department of Education, 2000b:27-30):

Fundamental learning

Fundamental learning comprise all the knowledge, skills and attitudes that are the foundation for all learning at the level concerned. These include language and communication, life skills and mathematical literacy. The minimum number of compulsory credits for the fundamental category of learning will be 45. Table 2.4 gives a layout of the credits which will be allocated to the various Learning Areas in this category.

Table 2.4:   Credits and Learning Areas for the category of fundamental learning

Learning Areas according to SAQA	Credits
Languages and/or communication	20
Mathematical Literacy	10
Learning Areas/sub-fields/courses proposed by the Department of Education	**Credits**
Life Skills, for example: Health and Sexuality Education Responsible Living / Self Management Entrepreneurial Skills Citizenship Education Information Technology Literacy Skills	15
TOTAL COMPULSORY CREDITS FOR THE FUNDAMENTAL	**45**

(Department of Education, 2000b:27):

According to SAQA, a minimum of **20 credits** from the field of **Communication Studies and Language** must be included in this category of the qualification. In pursuit of equity, multilingualism and the redress of past language discrimination, it is proposed that the language of learning and teaching and at least one other official language, be offered

and be given equal weighting in terms of credits. The study of more than two languages should be encouraged.

SAQA further stipulates that a minimum of **16 credits** is required from the sub-fields of Physical, Mathematical, Computer and Life Sciences, to be known as Mathematical Literacy. The Ministry however, only allocated 10 credits for this category. Mathematical Literacy deals with qualitative and quantitative relationships of space and time. It includes a critical awareness of the use of numbers, an appreciation of the space we live in and the ability to control personal finances. In other words, it includes mathematical skills required for everyday living in the 21st century as a responsible citizen. It equips learners with the basic knowledge, skills and attitudes that would prepare them for effective participation in a society in which scientific and technological applications play an increasingly important role. This important, compulsory component of all qualifications will enable learners to exit with the competencies that will enable them to continue to learn and apply the mathematics they will need throughout their lives, using the 'special language' of mathematics to communicate their everyday experiences.

The category Life Skills has been included as a compulsory component of Fundamental learning, and includes outcomes for citizenship education (including human rights), health and sexuality education, responsible living and self-management, information technology literacy and entrepreneurial skills.

Core learning

Core learning includes the specific, core knowledge, skills and attitudes required for the completion of a particular qualification. It is compulsory learning that is contextually relevant to the purpose of the particular qualification and provides the depth and specialisation that are required for the purpose of the qualification.

Table 2.5: Credits, Learning Areas and sub-fields for the category of core learning

Learning Area or sub-fields	Courses	
2 or more sub-fields of any field.	Physical Science Biological Science Electrical Design Electrical Theory Computer Applications Mathematics Electrical Cabling Other sub-fields	
TOTAL COMPULSORY CREDITS		**50**

(Department of Education, 2000b:29):

The minimum number of courses selected for the core must be **two** (depending on the requirements of the qualification) and must total a minimum of 50 credits. The depth required for a particular qualification is best met by restricting the selection to the same field or occupational cluster.

Elective learning

Elective learning provides additional, optional credits, which may be of personal interest or professional relevance, or which open the door to a range of possible career and occupational choices. The **elective** serves to further encourage broad, non-specialised studies and to provide learners with the opportunity to make the transition to working life. Accordingly, the chance to introduce some breadth into the qualification by introducing competencies that broaden the core whilst providing for other career or occupational directions, arises within this category.

The elective can also serve to reinforce the required specialisation for the purposes of the qualification, without prejudicing the need for breadth. Extra competencies that support the courses covered under the core may fulfil the need for specialisation.

Table 2.6: **Credits, Learning Areas and sub-fields for the category of elective learning**

Learning Area or sub-field	Courses	
1 or more sub-fields of any field.	Photography Bookkeeping Skills Mechanical Design Engineering Science Entrepreneurial Skills	
TOTAL COMPULSORY CREDITS		**25**

(Department of Education, 2000b:29):

Any number of courses may be selected from any of the twelve organising fields. A minimum of one course may be selected, totalling a minimum of 25 credits.

2.4.3 The outcomes-based approach: intentions and implications for curriculum development

The NQF and the curriculum guidelines developed as a result of the NQF, for example Curriculum 2005 and the above mentioned guidelines for the FET band, are intended to embody an outcomes-based approach to curriculum design, development and implementation.

2.4.3.1 What are the outcomes in an outcomes-based curriculum approach? An exploration and definition

An understanding of what is meant by an outcomes-based approach is crucial to the effective development and implementation of curriculum and learning programmes within

an outcomes-based paradigm.

Concepts underpinning outcomes-based education are not new and have been in and out of favour. Outcomes-based education has it roots according to Killen (1998a:2) in **competency-based** education (Franc, 1978 and Burke, 1989), **programmed learning** (Lumsdaine & Glaser, 1960), **criterion-referenced assessment** (Masters & Evans, 1986) and in the educational **objectives** approach as described by Mager (1962) and Tyler (1950). Mpepo (1988:8) explains that criterion-referenced assessment is seen as a form of mastery learning, since it is strongly based on attaining specified objectives which are tested against the criterion stated in the objective. The **mastery learning** concept by Bloom (1956) also uses outcomes to describe learning in a systematic curriculum process. Mastery learning added the notion that most learners can be effective, successful learners when provided with adequate resources and learning opportunities (Dlugosh, Walter, Anderson & Simmons (1995:178). Outcomes-based education as described by Spady & Marshall (1991), also focuses on principles of mastery learning which were implemented in entire school districts throughout the United States of America (Dlugosh, Walter, Anderson & Simmons, 1995:178).

The difference between aims, goals and objectives on the one hand and learning outcomes on the other will briefly be looked at now. Killen (1998a:3) makes the following comment in this regard:

> *The real issue is that statements of aims, goals and objectives describe the intent of some educational process. If these intentions are realised, the end product of the educational process can be referred to as an educational outcome. It is this link between intentions and results that is the heart of outcomes-based education. Statements of intent or statements of desired educational outcomes focus attention on the purpose of instruction, rather than on the content or learning experiences that are the vehicles for instruction.*

The difference between the intentions of the educational process (aims, goals and objectives) and the results of the educational process will be clarified in more detail in the following table:

Table 2.7: The difference between aims, goals, objectives and learning outcomes

Intentions with educational process	Results of the educational process
Aims, goals and objectives	*Learning outcomes*
Focus on what the teacher will do	Focus on what the learners will do
Describe the intention of teaching	Describe the results of learning
Focus on opportunities provided for learning	Emphasise how learning is used, especially how it can be applied in new areas
Involve estimating the amount that can be learned in a given period of time	Require flexible allocation of time

(Department of Education, Appendix E, 1996:2)

Comprehending the shift in focus from aims, goals, objectives to learning outcomes, it now becomes necessary to work towards a working definition of the term "outcome" from a curricular perspective. A list of definitions and/or descriptions of the term "outcome" as it manifests in the literature is given in the table below.

Table 2.8: Definitions and descriptions of the term "outcome"

TERM	DEFINITION/DESCRIPTION
Outcomes	"Are the results of learning processes, formal, non-formal or informal and refer to knowledge, skills, attitudes and values within particular contexts. Learners should be able to demonstrate that they understand and can apply the desired outcomes within a certain context" (Department of Education, 1997e:4).
Outcome	"Is that segment of a *unit standard* which is a statement of the required learner *capabilities* that must be demonstrated. Outcomes are specified by stated *performances* and *assessment* and *range* criteria (HSRC, 1995:2).
Learning outcomes	"A term used to describe the results or achievements of learning and teaching" (Department of Education, 1995c:3).

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Outcomes	Culminating demonstrations of learning that occur in clearly defined contexts (i.e. settings and circumstances) and that really matter in the long run for learners (i. e. after their formal education is finished)(Spady, 1994b). Spady (1994b:1-3, 190) refers to the ultimate, culminating demonstrations of learning at the end of schooling or a course as "*exit outcomes*", while "*enabling outcomes*" are demonstrations that are the building blocks of more complex outcomes.
Outcome	"An attainment target …identifying what a student is expected to learn" (Silvernail, 1996:48).

From these similar definitions and descriptions the following working **definition of an outcome**, for the purposes of this study may be formulated as follows:

- *A learning outcome is a predetermined demonstration or achievement of a learning process, which may include mastered knowledge, competence (abilities, skills and techniques), attitudes and values.*

- *Learning outcomes may be generic or context specific in nature.*

- *Transformational outcomes are formulations of life roles which learners are expected to demonstrate and which matter in the long term in their lives and world of work.*

Spady (1994b:2) however, does not agree that outcomes are values, beliefs, attitudes or a psychological state of mind. South African formulations of outcomes do however include these not always easy quantitatively measurable outcomes. Spady (1994b, 2) states that "*outcomes are what learners can actually do with what they know and have learnt – they are tangible application of what has been learnt*". For this reason he suggests that observable action verbs such as describe, explain, design or produce should be used instead of vague, non-demonstration processes like know, understand and believe. This however, does not mean that these processes are not important.

The term "competence" referred to in the working definition has been used ambiguously in the literature. Some of the terms often used interchangeably with competence are "skills", "ability", "capability", performance" and "outcomes". Regarding competence Zemke (1982:28) maintains the following:

Competency, competencies, competency models and competency based training are Humpty Dumpty words meaning only what the definer wants them to mean. The problem comes ... from some basic procedural and philosophical differences among those racing to define and develop the concept and to set the way the rest of us will use competencies in our day-to-day training.

The formulator of this definition for an outcome, will clarify the meaning of competence in relation to the concepts "abilities", "skills" and "techniques".

i)   The relationship between competence, abilities, skills and techniques

Different definitions of competence exist, ranging from adequately qualified to the capacity to produce job outputs at a level and quality relative to organisational restraints and demands. Competence is also demonstrated on different levels, as reflected in the use of terms such as "effective", "superior", "proficient", "appropriate" or "insufficient". Eraut (1998) has undertaken an in depth exploration of the concept. An appropriate definition, according to Eraut (1998:29), for the everyday public use of the term is *"the ability to perform the tasks and roles required to the expected standard"*. This definition has the advantage that it can be applied to a professional at any stage in their career and not only to a newly qualified. The expected standard referred to in the definition will obviously vary with experience and responsibility and will take into account the need to keep up to date with changes in practice (Eraut, 1998:129). During the 1970s, competency-based training focused on the achievement of competencies which were assumed to constitute competence in one particular job. Job analysis, task analysis and skills analysis provided detailed descriptions of a job which could then be used to provide training which exactly matched it. McMahon & Carter (1990:40, 49) describe a job, task and skills analysis as follows:

An investigation into the current job (what is?) and the future job (what

ought to be?). A job analysis breaks the job down into a series of activities and analyses the relationship between each of the activities in the job. These activities are in turn broken down to duties and tasks (and sub-tasks where appropriate). Because of the changing nature of work it is imperative a job analysis should look at existing duties-tasks-sub-tasks (descriptive) and future duties-tasks-sub-tasks (normative). A job-analysis ...can be used as base information for job-design and the reorganisation of work patterns.

A skills analysis ...is a second level analysis which is concerned with identifying the key competencies required to perform the duties and tasks identified through the first level (job) analysis described earlier. A skills analysis is about describing what skills an employee needs to acquire to be competent in a particular job.

McClelland (1973) suggested a job and skills analysis which focus on training beyond the threshold of merely adequate performance development. He defines competency as *"an underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job or situation"* (Eraut, 1998:133). The underlying characteristic referred to indicates that competencies are ways of thinking or behaving which generalise across situations and endure for a reasonably long period of time. Fletcher (1991:32) also refers to the generalisability of skills in his description of competence as *"a wide concept which embodies the ability to transfer skills and knowledge to new situations within the occupational area"*. Spencer & Spencer (1993) published a Competency Dictionary based on generic and transferable aspects of competence. The twenty most common competencies are presented in Table 2. 6:

Table 2.9: The twenty most common competencies in Spencers & Spencers' (1993) Competency Dictionary

Achievement and action	Helping and human service
Achievement orientation	Interpersonal understanding
Concern for order, quality and accuracy	Customer service orientation
Initiative	

Information seeking	
Impact and influence	**Managerial**
Impact and influence	Developing others
Organisational awareness	Directiveness/assertiveness and use of positional power
Relationship building	Teamwork and co-operation
	Team leadership
Cognitive	**Personal effectiveness**
Analytical thinking	Self-control
Conceptual thinking	Self-confidence
Technical/professional/managerial expertise	Flexibility
	Organisational commitment

Note the similarities between these common competencies and the SAQA critical outcomes which will be discussed in Section 2.4.3.2. The Norms and Standards for Educators Policy (Department of Education, 2000a:10-11) describe the applied competencies which have to be demonstrated by educators. Applied competence is defined as a learner's demonstrated ability in an authentic context, to consider a range of possibilities for action (practical), and based on an understanding of the underpinning knowledge and thinking (foundational), to adapt to changing or unforeseen circumstances (reflexive) (Department of Education, 2000b:48). The foundational, practical and reflexive competencies to be preformed by educators are described in terms of roles in the legislative documentation.These roles are explained in detail in Section 3.2.2.

The working definition of an outcome for this research refers to three kinds of competencies, namely abilities, skills and techniques. Slabbert (1996, 103-104) describes these competencies as follows:

- **Abilities**

Abilities are at the core of training and education and provide the prerequisites for performing tasks in a learning, work and everyday situation. Abilities entail the basic, naïve reception of impressions from the direct environment such as for example hearing, looking and touching, as well as basic expressions of motor movements such as speaking, turning and running (Slabbert, 1996:103).

Abilities are expressed as **capabilities** when they are *operative in relation to specific content areas, contexts and value frameworks*. The HSRC (1995:1) suggests that the following format should be used when formulating capabilities: A learner at this level is capable of "………**ing"**. For example: The science learners are capable of gather*ing*, analyz*ing* and interpret*ing* data presented in a physics research article.

- **Skills**

Skills entail the **execution of an ability guided by thinking** (the mind). *Communicating* an idea will be the skill when *speaking* is guided by the mind. Similarly, *listening* is the skill when *hearing* is guided by the intellect (Slabbert, 1996:103). More complex skills, such as problem-solving, analyzing, classifying, evaluating, comparing, decision-making, anticipating and others are vested in a combination of different abilities (Nisbet & Shucksmith, 1986:14-16).

- **Techniques**

Many texts do not distinguish between skills and techniques, but for the purposes of this discussion the difference between skills and techniques will be explicated. A technique is executed when an **extension or addition** (like an instrument) of the human body is implemented in conjunction with an ability or skill. The skillful surgeon for example knows how to use an instrument like a scalpel to make an incision when operating on a patient. A journalist has mastered the technique of writing when he/she can use the skill of communicating and then typing what has been communicated on a personal computer.

In the South African process of restructuring education, two types of outcomes will drive and direct curriculum and programme development. The broad, generic outcomes

referred to in the definition are labelled *"critical cross field outcomes"*, while the context specific outcomes are labelled *"specific outcomes"*. The following sub-section will explore these two types of outcomes.

2.4.3.2 Critical cross-field outcomes and the vision of lifelong learning

The critical cross-field outcomes represent the transformational outcomes which have been explained earlier in Section 2.4.1. The critical cross-field outcomes which have been adopted by the South African Qualifications Authority (SAQA) will underpin all learning, learning programmes and curricula in South Africa. These outcomes describe the characteristics and competencies that all South African learners should demonstrate regardless of their age, sex, profession and, status in society (Killen, 1998a:7). The "critical cross-field outcomes" will be referred to as "critical outcomes" in the discussions that follow.

The critical outcomes are instrumental in realising the vision of South African education, which is to prepare each individual learner to become a **lifelong learner.** The NQF will provide the system of progression and articulation in education which will make continued learning possible, but the critical outcomes describe the competencies needed to sustain a culture of lifelong learning. They encapsulate the real life roles which learners have to perform. Spady (1994a:21) suggested that there are ten life performance roles that require complex applications of many kinds of knowledge and all kinds of competence as people confront the challenges surrounding them in their social systems. Spady (1994b: 1994:69-71) suggests that five of the life performance roles deal with social and interpersonal performance roles that inherently involve interactions amongst people. These are the roles shown above the dotted line in Figure 2.4:

- Listeners and communicators should be able to comprehend and express ideas, information, intention, feeling, and concern for others in ways that are clearly understood and appreciated.

- Teachers and mentors should enhance the thinking, skills, performance orientations, and motivation of others through the mediation they provide, the counsel they give, and the example they set.
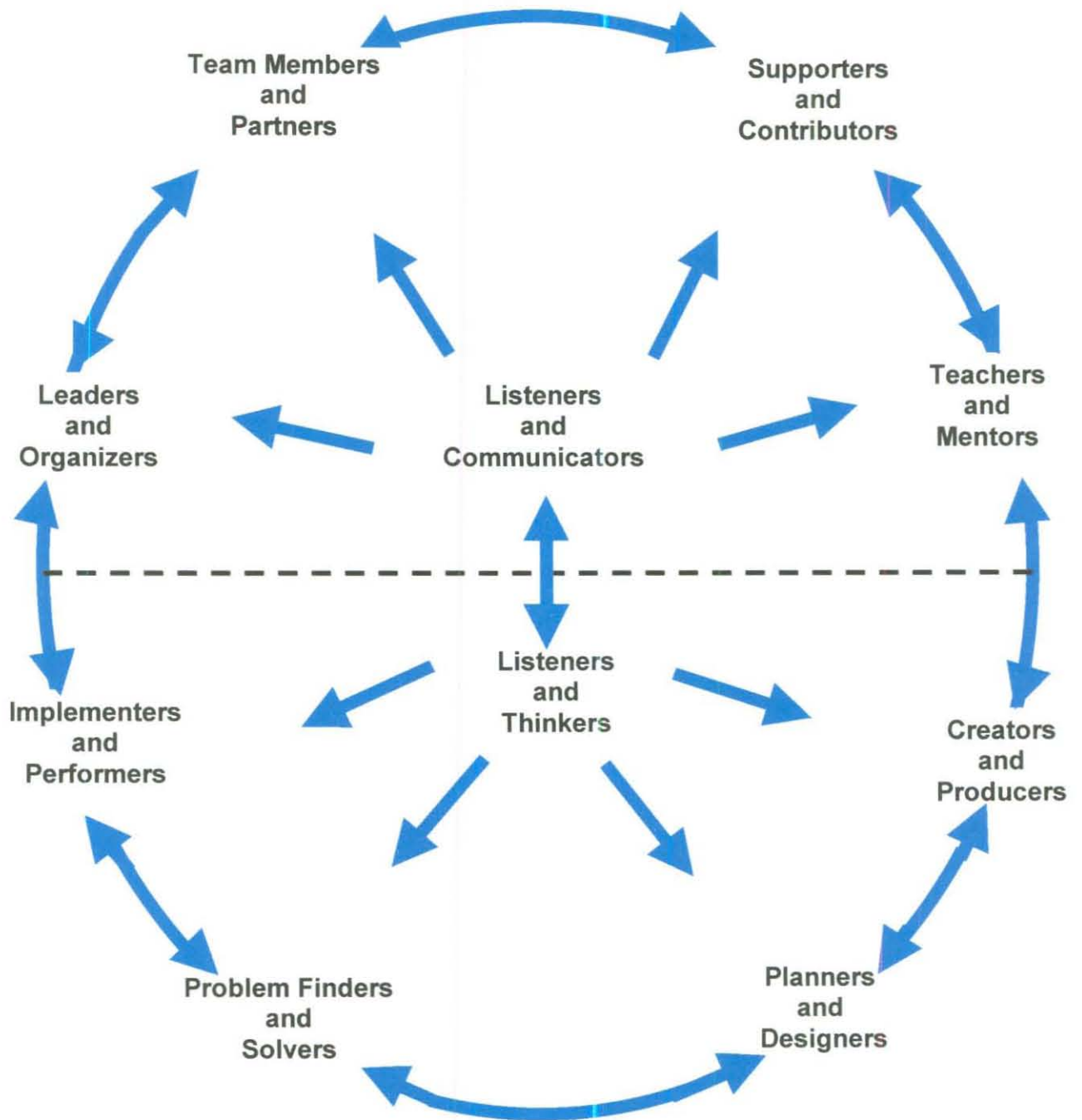
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- Supporters and contributors should invest time, ideas, and resources to improve the quality of life of those around them.

- Team members and partners should contribute their efforts to collaborative endeavours and who seek agreement on goals, procedures, responsibilities and rewards, setting aside personal preferences in order to accomplished, anticipating roadblocks, and supporting the participation of others to achieve the results.

Below the dotted line are performance roles, inherently more technical and strategic in character. These are the roles that individuals potentially should carry out entirely on their own, but that also might involve others. These include:

- Learners and thinkers who should develop and use cognitive tools and strategies to translate new information and experiences into sound action. They might use their repertoire of knowledge and strategies to extend their capacities for successful action by assimilating, analysing, and synthesizing new ideas and experiences.

- Implementers and performers who should apply basic and advanced ideas, information, skills, tools, and technologies as they carry out the responsibilities associated with all life roles.

- Problem finders and solvers who should anticipate, explore, analyse, and resolve problems by examining their underlying causes from a variety of perspectives and then develop potential solutions to them.

- Planners and designers who should develop effective plans, methods, and strategies for anticipating and resolving issues and problems and for charting new courses of action.

- Creators and producers who should seek new possibilities for understanding or doing things and who translate hose possibilities into original, workable products or processes that change the working or living environment.

Figure 2.4 represents the life performance roles proposed by Spady (1994b).

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Figure 2.4:   Fundamental life performance roles

Team Members
and
Partners

Supporters
and
Contributors

Leaders
and
Organizers

Listeners
and
Communicators

Teachers
and
Mentors

Implementers
and
Performers

Listeners
and
Thinkers

Creators
and
Producers

Problem Finders
and
Solvers

Planners
and
Designers

(Spady, 1994b:69)

In South Africa, these life performance roles are represented by the critical outcomes. There are eight critical outcomes of which the eighth includes "developmental outcomes" (Department of Education, 1997a:10-12). These outcomes, when mastered, will ensure that learners gain the knowledge, competencies, attitudes and values that will allow them to contribute to their own success, as well as to the success of their family, community and nation as a whole (Department of Education, 1997a:13).

Critical outcomes are, as the name indicates, not dependent on or restricted to a specific learning context. Research for identifying, selecting and defining critical cross-field outcomes for the South African context, was undertaken in *inter alia*, the United Kingdom, United States of America (USA), New Zealand, Australia and Canada. Overlapping sets of generic outcomes formulated by different countries will be compared in table format. The sets of generic competencies which will be compared include those from Australia and Scotland because they were used as a basis from which the South African critical outcomes were developed. The three sets of generic outcomes comprise of:

- Generic competencies proposed by the National Training Strategy Initiative Report which was written for the South African education and training sector (HSRC, 1995:102).

- The Australian Key Competencies identified by the Mayer Committee (Mayer, 1993). Initially seven Key Competencies were presented and later an eighth was added (Killen, 1998c:3-4). The parallels between the South African critical outcomes and the Australian Key Competencies are obvious.

- The Core Skills which underpin education and training in Scotland (Department of Education, 1996a: Appendix C).

Table 2.10: Comparison of generic competencies

NATIONAL TRAINING STRATEGY INITIATIVE REPORT GENERIC COMPETENCIES	AUSTRALIA'S KEY COMPETENCIES	SCOTLAND'S CORE SKILLS
Thinking about and using learning processes and strategies.		
Solving problems and making decisions.	**Solving problems**: the capacity to apply problem-solving strategies in purposeful ways, both in situations where the problem and th4e solutions are clearly evident and in situations requiring critical thinking and an creative approach to achieve an outcome.	**Problem-solving skills**: The ability to identify and clarify the nature of problems, to plan and implement strategies to address problems and to evaluate the effectiveness of strategies and solutions.
Planning, organising and making decisions.	**Planning and organising activities**: The capacity to plan and organise one's work activities, including making good use of time and resources, arranging priorities and monitoring one's own performance.	
Working with others as a member of a team/group/community.	**Working with others in teams:** The capacity to interact with other people on a one-to-one basis and in groups, including working as a member of a team to achieve a shared goal.	**Personal and interpersonal skills**: the ability to work independently and co-operatively with others and to use self-awareness and social-awareness to guide actions and decisions.
Collecting, analysing, organising and critically evaluating information.	**Collecting, analysing, organising g information**: the capacity to locate, sift and sort information in order to select what is required, present it in a useful way, and evaluate the information itself and the source and methods used to obtain it.	

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Communicating ideas and information.	**Communicating ideas and information**: the capacity to communicate effectively with others using spoken, written, graphic and other non-verbal means of expression.	**Communication skills**: Ability to produce written and spoken communications appropriate for a range of purposes and audiences and to respond appropriately to a range of messages through reading and listening. with people at all levels.
Participating in society and democratic processes (legal, political, economic, social).		
Using science and technology critically to enhance control over the environment.		**Information technology skills**: The ability to use new technology to input, process, and output information and to perform basic operations.
Applying mathematical concepts and tools	**Using mathematical ideas and techniques**: the capacity to use mathematical ideas, such as numbers and space, and techniques, such as estimation and approximation for practical purposes.	**Numeracy skills**: The ability to use a range of fundamental arithmetical and mathematical, including artistic skills, to reach conclusions in a range of situations.
Understanding and using core skills, concepts and procedures that underlie the domains of human and natural sciences, arts, language and literature.		

These outcomes represent the knowledge, competencies, attitudes and values which are flexible and transferable from one context or problem situation to another. In these outcomes are embedded the seeds for cultivating lifelong learning ability. These outcomes encapsulate the generic competencies that would provide learners with the knowledge and skills that they need for their lives and before they enter the labour market. These outcomes are therefore the formulations of the life roles to be performed by learners. For some, for example, the one generic thinking skill which encompasses many other skills such as analysing, critical evaluating and decision-making, is **problem-**

solving.

The SAQA proposed critical outcomes are the following:

1. Identify and solve problems and make decisions using critical and creative thinking.

2. Work effectively with others as members of a team, group, organisation and community.

3. Organise and manage themselves and their activities responsibly and effectively.

4. Collect, analyse, organise and critically evaluate information.

5. Communicate effectively using visual, symbolic, and/or language skills in various modes.

6. Use science and technology effectively and critically showing responsibility towards the environment and others.

7. Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation (SAQA, 1997:7).

The following developmental outcomes should be read in conjunction with the above listed seven critical outcomes. In order to enhance the full personal development of a learner, as well as social and economic development at large, any programme of learning must make an individual aware of the importance of the following principles (SAQA, 1997:7):

1. Reflecting on and exploring a variety of strategies to learn more effectively.

2. Participating as a responsible citizen in the life of local, national and global communities.

3. Being culturally and aesthetically sensitive across a range of social contexts.

4. Exploring education and career opportunities.

5.   Developing entrepreneurial opportunities.

The next section will distinguish in detail between critical outcomes and specific outcomes.

2.4.3.3 Specific outcomes

Specific outcomes refer to the specifications of what learners should be able to demonstrate in the various Learning Areas in Curriculum 2005. Currently there are sixty six (66) specific outcomes. These are included in Appendix 1 and are categorised for each Learning Area. In each of the Learning Areas a set of specific learning outcomes will describe what knowledge, skills, attitudes and values have to be demonstrated on certain NQF levels. The differentiation between various bands and phases of learning would be addressed by different levels of complexity in the

- **processes** learners engage in, and

- **methodologies** used for assessment, as well as in the **kinds of evidence** through which learners will demonstrate achieved outcomes (Department of Education, 1997a:15).

According to the Curriculum Framework for General and Further Education and Training (Department of Education, 1995a: 31) it should be acknowledged that not all learners learn at the same rate or in the same way and, therefore, learners should not be expected to attain the specific outcomes in the **same time** or at the **same place** or in the **same manner**. Learners should rather attain them over a broad range of learning experiences encountered over several grades and in a variety of contexts.

According to Killen (1998a:9) most traditional approaches to education are bound by *"this tyranny of time"*. A possible reason for time-based learning programmes Spady & Marshall (1991:72) suggest, is the fact that we are *"mired in an Industrial Age model governed by an Agricultural Age calendar"*. Time-based learning programmes rely on fixed learning opportunities and calendar closure, instead if on expanded opportunities and outcome closure (Spady, 1998:151). Barr & Tagg, (1995:13) also say that learning institutions will not necessarily be promoting learning, but teaching as long as they

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"provide for the activity of teaching conceived primarily as delivering 50-minute lectures". Killen (1998a:9) continues to say that time- and calendar-dominated curricula would be sensible only if all learners did learn and develop at the same rate, mastered different subjects at the same rate and were equally suited for a time-based education system. He also suggests that learning institutions, or rather teaching institutions as Barr & Tagg (1995) would label them, mainly structure their activities around timetables and calendars for administrative convenience.

On the other hand, ignoring time constraints for attaining learning outcomes though, is to ignore the reality of the real world - but what Killen (1998a) as well as Spady (1998) and Spady & Marshall (1991) are saying, is that teachers and learners should not be led to think that learning is over when the bell rings, but rather when they have mastered outcomes. The Curriculum Framework for General and Further Education and Training (Department of Education 1995a:39) also acknowledges the necessity for time limits when it states that for national recognition and affordability purposes, mutually agreed restrictions will, however, have to be placed on the **number of times** a learner may apply to be assessed against the same criteria for the same specific outcomes.

The contexts for specific outcomes to be mastered in a flexible time model, will be described in learning programmes. These will be developed at local, provincial or regional levels according to the prescribed requirements for each qualifications level on the NQF. The specific outcomes, which are underpinned by the critical outcomes, should serve as criteria for assessing the effectiveness of learning processes, learning programmes and the progress of learners (Department of Education, 1995a:30).

The above mentioned statement indicates that specific outcomes will not be functioning on their own, but will rely on two auxiliary structures namely assessment criteria and range statements.

(i)   Assessment criteria

Assessment criteria are derived directly from specific outcomes and they provide evidence that a learner has achieved a specific outcome. The criteria give in broad terms an indication of the observable processes and products of learning which will serve as culminating demonstrations of a learner's achievement (Department of Education,

1997a:16).

The book "Ways of seeing the National Qualifications Framework" (HSRC, 1996:101) indicates that while specific outcomes are of the form "learners will + **active verb**...", assessment criteria should be written in the following format: noun + **passive verb** + qualifier (as indicator of level of complexity). An example from the Learning Area Natural Science is given for further clarification.

Table 2.11: An example of a specific outcome with assessment criteria

Specific outcome	Assessment criteria
Use process skills to investigate phenomena related to the natural sciences.	Learners conduct explorative investigations in which:
	1 Phenomena are identified.
	2 Investigative questions are formulated.
	3 A plan of action is formulated.
	4 Data are collected.
	5 Data are analysed, evaluated and interpreted.
	6 Findings are communicated.

(Department of Education, 1997a:146)

Since the assessment criteria are broadly formulated and do not in themselves provide sufficient details of what and how much learning proclaims an acceptable level of achievement of an outcome, range statements will fulfil this function. While the assessment criteria provide a framework for assessment, the **range statements** flesh out the "substance of what assessment will be applied to" (Department of Education, 1997a:16).

(ii)   Range statements

Range statements provide a general guide to an assessor and a learner as to the scope, range of knowledge, degree of rigour and level of complexity of parameters of the achievement (HSRC, 1995:77). The salient verbs used for formulating assessment

criteria are described in sufficient detail in range statements to assist in the planning of learning programmes and assessment strategies.

The range statements indicate the **content, processes** and **products**, but it is important to comprehend that it does not restrict learning to specific lists of knowledge items or activities which learners have to work through mechanically and behaviouristically. Although providing direction, range statements must be flexible and allow for multiple learning strategies, flexibility in choice of content and processes, as well as for a variety of assessment methods (Department of Education, 1997a:16-17).

While it is indeed possible that the assessment criteria for a specific outcome is the same for different grades and phases on NQF level 1, it is the **range statements** which will describe the **progressively increasing complexity** and **sophistication** as learners proceed to higher grades.

The critical outcomes will underpin all future curriculum development and learning in South Africa and must be used as the point of departure in the curriculum design process. For Curriculum 2005 the follow up actions, which involves the formulation of specific outcomes with their associated **range statements** and **assessment criteria,** have already been done on a national level for each of the eight Learning Areas. The Curriculum 2005 document, which is a national document, entails all the above mentioned curriculum elements. At the higher education level, the process could be quite different from the schooling level.

At the schooling level in the General Education and Training Band, actions following the formulation of national specific outcomes, assessment criteria and range statements, would be to develop **learning programmes.** Development of learning programmes will take place on a provincial or regional level. The Norms and Standards for Educators actually state that teachers should not only be able to interpret learning programmes, but that they should be capable of "designing original learning programmes" (Department of Education, 2000a:16). Learning programmes will consist of different outcomes selected from different areas of learning. The Curriculum 2005 document describes learning programmes as vehicles through which a curriculum will be implemented at various sites of learning such as schools.

Learning programmes, as opposed to subject syllabi, are not rigid, prescriptive and non-negotiable. When clustering various specific outcomes into a learning programme, integration and cross curricular learning is promoted. Learning programmes should rather be viewed as descriptive, integrative across Learning Areas, flexible guidelines which allow teachers to be innovative when planning learning experiences and setting up learning environments which would lead to the mastering of outcomes. Flexible learning programmes demand teachers who are competent and professional in their planning of educational endeavours and decision making.

One of the final design processes will be the development of performance indicators for each learning programme. Where range statements and assessment criteria are broad indicators of what learners need to demonstrate before they are seen as having achieved an outcome, performance indicators are more specific. They give the details of the content and contexts in which performance has to be demonstrated. Performance indicators will not only indicate whether an outcome has been achieved or not, but also the **level** of achievement.

2.4.3.4 Using of outcomes in the curriculum design process

(i)   The subject-based curriculum development process

Traditionally subject-based curriculum designs were the most popular and widely used curriculum designs for many years. In the majority of schooling systems and also university courses, this remains the popular type of curriculum design. In this type of design the curriculum is developed around the essential knowledge and content that has developed in a specific subject area, also called the **substantive structure** of that subject.

The learning content to be dealt with in a subject area is then separated into syllabus themes which have to be mastered by learners over a fixed period of time, normally by the end of a school year. The teaching and learning process is consequently mainly driven by the end of the year exam, with the ultimate exam being the end of the school career exam in grade 12. Each syllabus theme is further divided into sub-themes which are normally described in more detail in a document called the "scheme of work". From the scheme of work teachers do their planning for the different lessons to be presented

to learners (Fraser, 1996:80-82 and Olivier, 1998:32-33).

Since the teacher presents his/her planned lessons it is assumed that teachers together with text books are the major resources in the classrooms. In this type of design teachers assume the active role, while learners are predominantly receptive while listening to the lectures and lessons. This role which learners have to play tends to forster a passivity in learners and a reluctance to take responsibility for their own learning.

Curricula are rigidly planned in a top-down manner with little negotiation and input from stakeholders. The main function of the teacher is to implement the syllabus so as to achieve the preset goals and objectives within each syllabus theme. Figure 2.5 gives an illustration of the traditional subject-based curriculum design process.

Figure 2.5: Subject-based curriculum design process

```
                    School curriculum
                         │ consists of
                         ▼
              •  Core subjects
              •  Elective subjects
                         │ content to be learned outlined in a
                         ▼
            Subject syllabus with syllabus goals
                         │ consists of
                         ▼
                  Syllabus themes
                         │ divided into
                         ▼
                    Sub-themes
                         │ described in a
                         ▼
                  Scheme of work
                         │
                         ▼
```

Lesson units with lesson objectives	Planned dates for lesson completion	Actual dates of lesson completion	Planning of teaching-learning aids and media

| example | Lesson 1 | Lesson 2 | Lesson 3 | Lesson 4 |

The following paragraph will address processes regarding outcomes-based curriculum design.

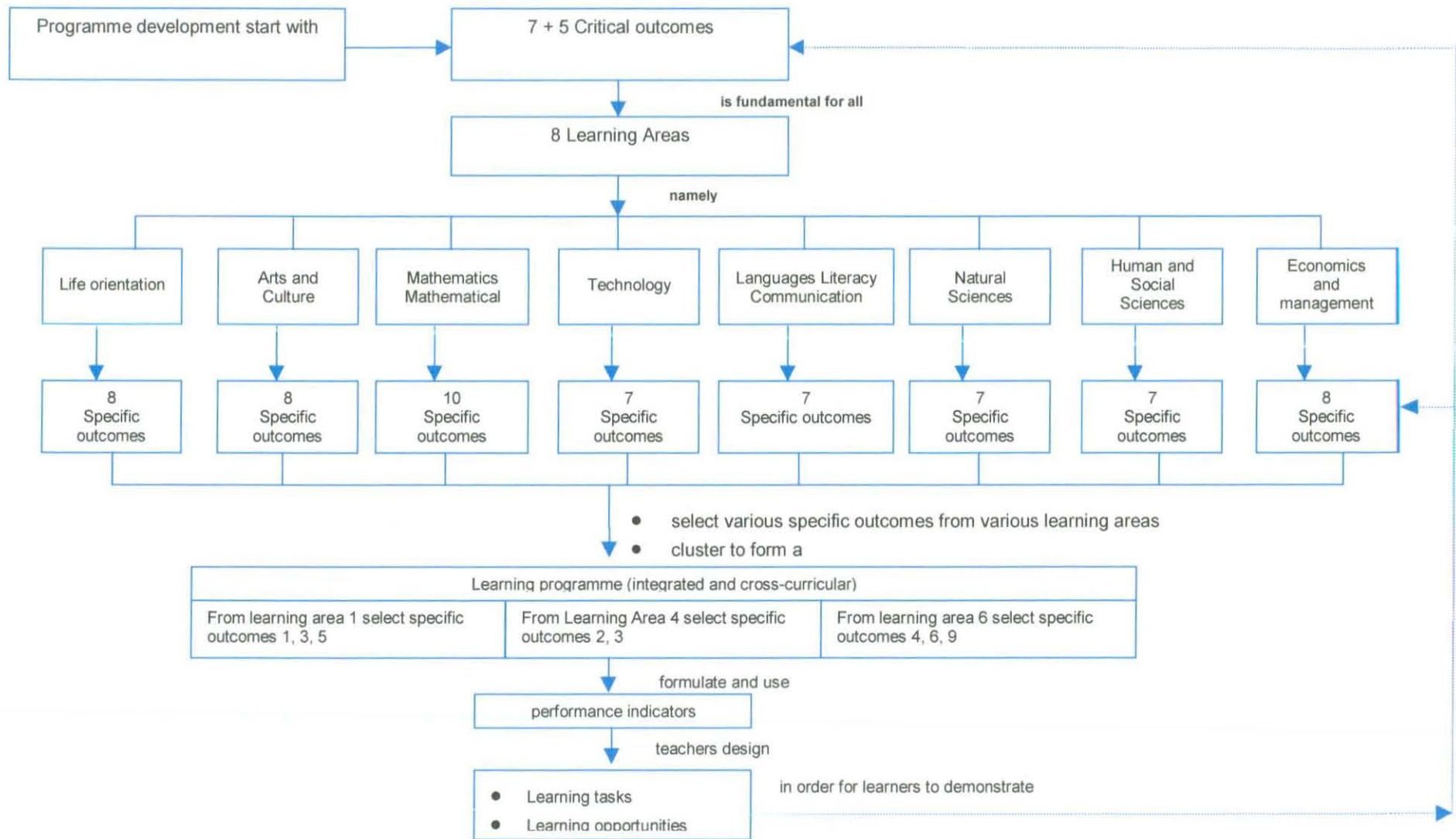## (ii)   *The outcomes- based curriculum design process*

In this approach to curriculum or programme design, the process **starts with the outcome** (not the content) which is a clear picture of what learners must demonstrate at the end of their learning experiences. Only then are the "vehicles" identified by means of which the outcomes may be achieved. Vehicles to be selected might include appropriate content, resources, teaching-learning methodologies and assessment strategies.

For Curriculum 2005, the SAQA critical outcomes as well as the sixty six specific outcomes of the eight Learning Areas, have been provided by the National Department of Education. From these, the provinces, regions or teachers will design their own learning programmes starting with the outcomes. Since learning programmes intend to integrate learning across the Learning Areas, specific outcomes have to be clustered. Clustering is not a mechanical or permanent grouping of outcomes. The following principles are recommended when clustering outcomes (Department of Education, 1997a:17-18):

- The selection of specific outcomes must be done in such a way that the essential conceptual and thematic ambience of a learning area does not get lost.

- A learning programme should have a primary focus on one or more Learning Areas, but should also draw on specific outcomes, content, processes or context elements from other Learning Areas.

- Learning programmes should not follow a permanent formula for clustering outcomes. This should rather be a dynamic process to be followed by different material developers in different situations.

Once the learning programme has been developed, the performance indicators will be developed. They provide the details of the content and processes that learners should master, as well as the contexts in which the learners will engage. The following figure will illustrate the basic process of design:

Figure 2.6 The outcomes-based curriculum design process

Programme development start with	7 + 5 Critical outcomes

is fundamental for all

8 Learning Areas

namely

Life orientation	Arts and Culture	Mathematics Mathematical	Technology	Languages Literacy Communication	Natural Sciences	Human and Social Sciences	Economics and management
8 Specific outcomes	8 Specific outcomes	10 Specific outcomes	7 Specific outcomes	7 Specific outcomes	7 Specific outcomes	7 Specific outcomes	8 Specific outcomes

- select various specific outcomes from various learning areas
- cluster to form a

Learning programme (integrated and cross-curricular)

From learning area 1 select specific outcomes 1, 3, 5	From Learning Area 4 select specific outcomes 2, 3	From learning area 6 select specific outcomes 4, 6, 9

formulate and use

performance indicators

teachers design

- Learning tasks
- Learning opportunities

in order for learners to demonstrate

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The above-mentioned curriculum design process which includes clustering outcomes from various Learning Areas, mainly applies to Curriculum 2005 in the GET phase. For the FET and higher education bands, the process will not be exactly the same since the eight Learning Areas are not the major determinants across which integration has to take place. However, the fact remains that the design process also has to start at the SAQA critical outcomes, and exit level outcomes for particular qualifications.

The outcomes-based design process also needs to be incorporated into the broader activity of curriculum development. Carl (1995:21) distinguishes between four major phases in curriculum development, namely design, dissemination, implementation and evaluation. Various curriculum development models have been suggested in the curriculum field which varied from the linear to cyclic models stressing the interactiveness of the different phases in development. The Tyler model (1958) is a linear model and is based on the well known Tyler rationale, which comprises four questions that introduce the elements of curriculum on which decisions should be taken. These are presented in Table 2.8.

Table 2.12: The relationship between Tyler's questions and elements of the curriculum definition
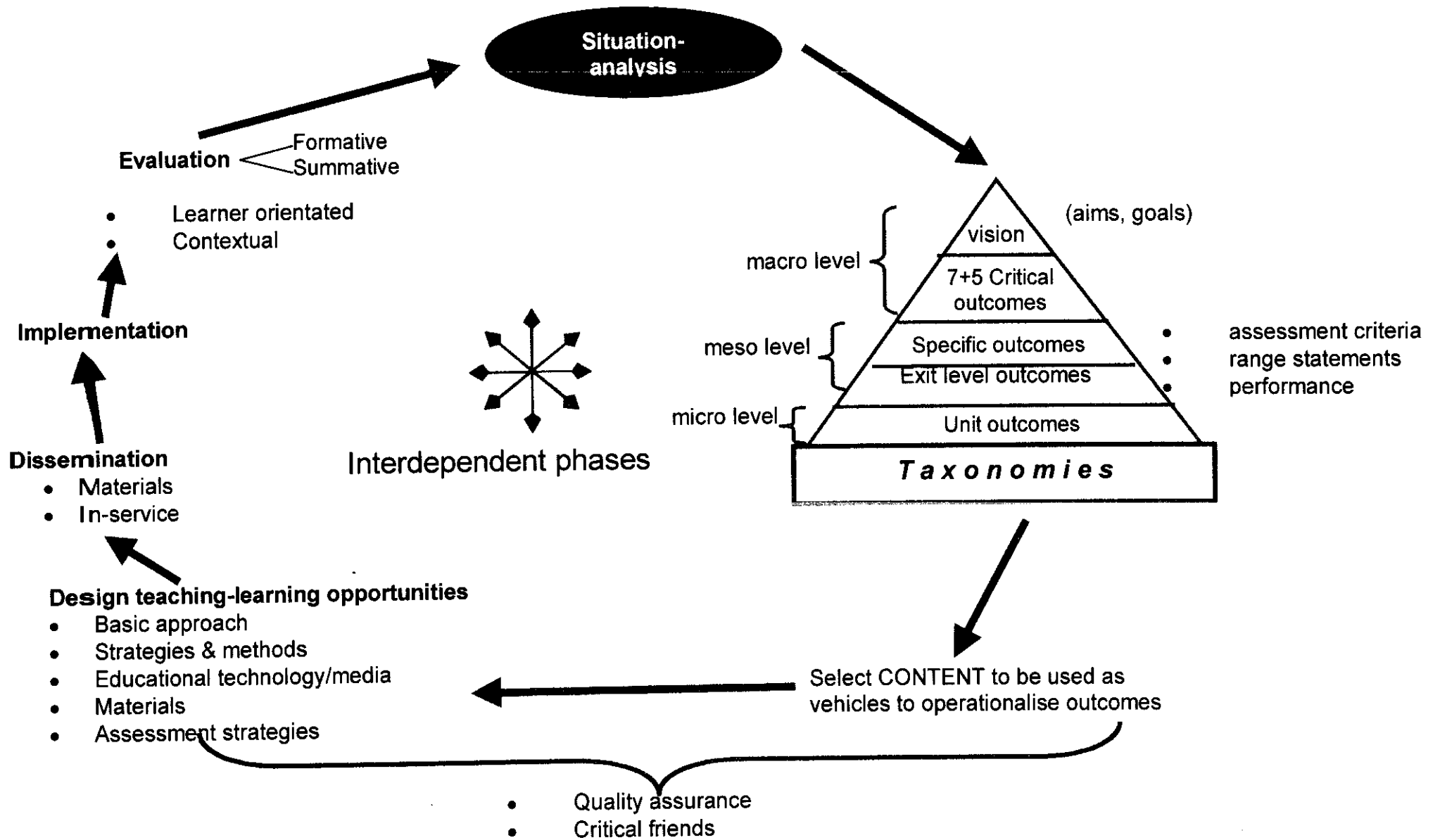
A LINEAR MODEL FOR CURRICULUM DEVELOPMENT BASED ON TYLER'S RATIONALE	
Tyler's questions	**Elements of curriculum definition**
1 What educational purposes should the schools seek to attain?	1 Goals
2 What learning experiences can be provided that are likely to attain the purposes?	2 Content
3 How can these educational experiences be organised for effective teaching?	3 Materials and activities
4 How can effectiveness of learning experiences be evaluated?	4 Evaluation

The linear model was followed by cyclic curriculum development models which

acknowledged the value of summative and formative feedback when replanning and improving curricula. Workers who contributed towards a generally acceptable cyclic curriculum model to mention a few, include Taba (1962), Wheeler (1976), Nicholls & Nicholls (1972), Saylor-Alexander (1981), Oliva (1992) Krüger (1980) and Kachelhoffer (1987).

A general curriculum development model which may be used for the current situation in South African development can be depicted as follows in Figure 2.7:

Situation-analysis

Evaluation —Formative / Summative

- Learner orientated
- Contextual

(aims, goals)

Implementation

vision

macro level — 7+5 Critical outcomes

meso level — Specific outcomes / Exit level outcomes

micro level — Unit outcomes

assessment criteria
range statements
performance

T a x o n o m i e s

Dissemination
- Materials
- In-service

Interdependent phases

Design teaching-learning opportunities
- Basic approach
- Strategies & methods
- Educational technology/media
- Materials
- Assessment strategies

Select CONTENT to be used as
vehicles to operationalise outcomes

- Quality assurance
- Critical friends

All the outcomes-based curricula and learning programmes registered on the NQF will have to be managed. Although all the different South African curriculum management and development structures and bodies are not yet in place, the existing and envisaged initiatives will be explored and analysed in the following paragraphs.

2.5.4 Curriculum management and development structures envisaged for South Africa.

An encompassing National Qualifications Framework which has been developed, is currently in the process of being implemented and managed. The next section will look at the structures and bodies which are in the process of being established and who will have the daunting task to initiate and sustain tasks such as registering, co-ordinating, accrediting and quality assuring qualifications.

2.5.4.1 Future structures and institutions responsible for curriculum development and management in South Africa

In June 1994 the Ministers of Education and Labour established an Inter-Ministerial Working Group to establish an integrated approach to education and training and to prepare legislation for the creation of a National Qualifications Framework. The work went ahead and the NQF Bill was passed into law as the South African Qualifications Act on 4 October 1995 (SAQA, 1995:4). This brings the discussion to one of the paramount structures in future curriculum development and management – the South African Qualifications Authority – hereafter referred to as SAQA.

(i)   The South African Qualifications Authority (SAQA)

SAQA has been conceptualised as comprising a board of between twenty-two and thirty members appointed by the Ministers of Education and Labour (HSRC, 1995:21). SAQA The members were nominated from a diverse group of role players including education, labour, universities, technikons, teachers' colleges, adult basic education and training, early childhood development, special education needs and the teaching profession (SAQA, 1997:4).

In terms of the SAQA Act (SAQA, 1995), SAQA has the following essential functions:

- SAQA must oversee the development of the NQF in consultation with bodies to be nominated by the Ministers of Education and Labour. It must formulate and publish policies and criteria both for the registration of bodies responsible for establishing educational standards, and for the accreditation of bodies responsible for monitoring and auditing achievements. Through the NQF, SAQA will ensure the facilitation of access to, mobility and progression within education, training and career paths.

- SAQA must oversee the implementation of the NQF. It must ensure the registration, accreditation and assignment of functions to the registration and accreditation bodies, as well as the registration of national standards and qualifications.

- SAQA will advise the Ministers of Education and Labour.

- SAQA must consult with all affected role players. SAQA is obliged to comply with the rights and powers of bodies in terms of the Constitution and Acts of Parliament (HSRC, 1995:21 and SAQA, 1997:5).

- SAQA is also responsible for the development of level descriptors for the 8 main levels of the NQF and the sub-levels in the General Education and Training band. Level descriptors describe briefly the expected level of competence of learners at a specific level in relation to certain critical outcomes. Level descriptors will be developed in co-operation with the National Department of Education (to be called the National Institute of Lifelong Learning Development), the envisaged Higher Education and Training Council and other role players (Department of Education, 1996a:50). The SAQA Bulletin (1997:7) states that compilers of qualifications must ensure that all the critical outcomes adopted by SAQA, have been addressed appropriately at the level concerned for registration on the NQF. If it is not the case, compilers of qualification will be required to address the exclusion to the satisfaction of SAQA before it may be considered for registration.

Various bodies will assist SAQA to fulfil the various roles and functions described above.

(ii)   *National Standards Bodies (NSBs), Standards Generating Bodies (SGBs) and*

Education and Training Quality Assurance Bodies (ETQAs)

National Standards Bodies (NSBs) are established by SAQA, with one NSB representing each of the 12 organising fields. NSBs will include no more than 36 members from six stakeholder representative categories: business, labour, state, providers of education, critical interest groups and learners (communities) (SAQA, 1997:11). The NSBs will oversee the setting of standards in the various fields of learning. The work of the NSBs was launched on 21 and 22 October 1999 at the Old World Trade Centre by the Deputy Minister of Education (SAQA, 1999a:1).

Standards Generating Bodies (SGBs) are bodies which are registered in terms of section 5(1)(a)(ii) of the South African Qualifications Authority Act of 1995 (SAQA, 1995). They are responsible to for establishing education and training standards or qualifications. In other words, standards, consisting of specific outcomes, assessment criteria and range statements, are developed for the different levels and sub-levels by Standards Generating Bodies (SGBs) (SAQA, 1998:2). These bodies will take their authority from their relationship to the NSB in the organising field to which they belong. Unit standards developed by SGBs will be recommended via the NSB to SAQA for approval and registration on the NQF.

The SGBs will comprise of **practitioners** in a specific area or organising field, at least one member whose brief it is to ensure progression and continuity from the previous level up to the level above, and one member whose brief it is to ensure portability. Portability implies maximum transferability across a level between different providers of education and career paths (Department of Education, 1996a:51).

Functions of SGBs will include the following (SAQA, 1997:12):

- SGBs are responsible for the generation and recommendation of unit standards and qualifications to the NSBs.

- SGBs will update and review existing unit standards.

- In relation with the functions of SGBs, the primary functions of the NSBs will entail the following (SAQA, 1997:12):

- Recommend a framework of sub-fields within the 12 organising fields to be used as a guide for the establishment of SGBs.

- Ensure that the work of a SGB complies with the SAQA requirements for development and registration of unit standards and qualifications.

- Recommend the registration of unit standards on the NQF to SAQA.

- Define the requirements and mechanisms of moderation to be applied across Education and Training Quality Assurance bodies (ETQAs).

The Education and Training Quality Assurance bodies (ETQAs) will also be accredited by SAQA with national stakeholder representation and will, to ensure integrity, not be a direct provider of education. In the case of the General and Further Education and Training band, the ETQA is likely to be associated to the provincial Education Department, but will include other stakeholders to ensure integrity so that the providers do not monitor their own provision alone (Department of Education, 1996a:51).

Functions of ETQAs are the following (SAQA, 1997:12):

- Promote quality amongst all the different providers of education and accredit them in terms of quality management.

- Register prospective assessors, evaluate assessment, certificate learners, maintain an acceptable database and submit reports and feedback to SAQA.

- Monitor and moderate the work done be education providers and undertake quality systems audits.

(iii) *Who will be responsible for the development of curriculum frameworks and learning programmes?*

A curriculum framework is a common, overall framework providing a philosophical foundation for the development of curricula. Curriculum frameworks will ensure that learning programmes developed are balanced, reflect education policy principles and goals, and that they promote nationally consistent and internationally acceptable

standards.

The Curriculum Framework outlines the principles guiding curriculum development, the organisation of the General and Further Education and Training bands, as well as the Learning Areas to be addressed. In addition to a Curriculum Framework it will be necessary to draw up a separate detailed framework outlining the new modular structure and rules of combination for qualifications in the Further Education and Training band. This detailed framework will also have to provide for the differing needs of different learners in the General Education and Training band, such as Adult Basic Education and Training (ABET), learners with special needs, pre-school and compulsory schooling (Department of Education, 1996a:52).
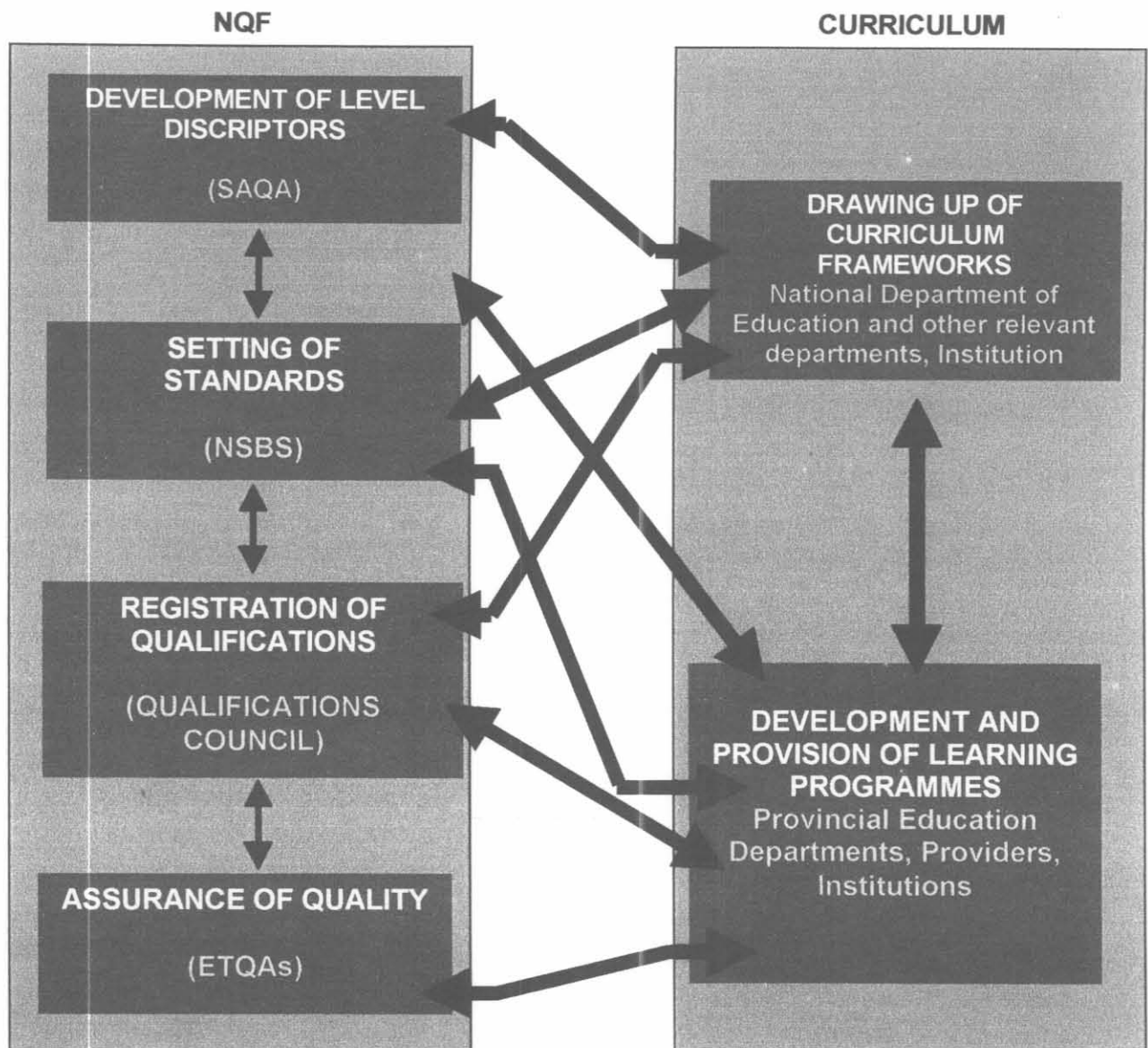
The national Department of Education (National Institution for Lifelong Learning Development), in consultation with Provincial Departments (Provincial Institutes for Lifelong Learning Development) and other relevant role players will be responsible for the drawing up of a **National Curriculum Framework.** Relevant role players to be consulted are industry, especially those that are vocationally orientated and relate to particular economic sectors, higher education, learners, educators and trainers. Central to a National Curriculum Framework is the development of guidelines for potential clustering of unit standards into a relevant learning programme, conducting assessment and providing typical examples of teaching and learning materials (Department of Education, 1997d:56 and Department of Education, 2000b:11-12).

Curricula and learning programmes emanating from the National Curriculum Framework will be outcomes-based, but **will not prescribe in detail the content** which will contextualise learning (Department of Education, 1996a:52). Learning programmes will be developed at the level of education provision. Learning Area Committees (on which the provinces will be represented) are responsible for the actual designing of learning programmes (Niebuhr, 1997:97). In adult basic education and early childhood development a number of public, private, national, provincial and local designers may provide their own learning programmes, while in formal schooling at General Education and Training level, the provision will be at provincial and local levels. It is envisaged that in formal schooling, approximately 80% of the timetable might include provincial competence, while 20% might be left unassigned to allow freedom and innovation on regional, local and school levels ((Department of Education, 1996a:52).

In the Further Education and Training band a very wide variety of provision, covering a range of contexts, also exist. All private providers will be guided and governed by the same processes as central providers if their credits and qualifications are to be Registered on the NQF. Learning programmes are developed on an inter-provincial basis and these learning programmes will eventually be taken up as provincial curriculum statements (Department of Education, 1997a:18 and Department of Education, 1996a:53).

The interactive relationships between the curriculum development and management functions on the one hand and the relevant bodies performing the functions on the other, might be represented as follows in Figure 2.8:

Figure 2.8 Interactive relationships between curriculum development functions and relevant bodies in service of the NQF

NQF   CURRICULUM

DEVELOPMENT OF LEVEL DISCRIPTORS

(SAQA)

SETTING OF STANDARDS

(NSBS)

REGISTRATION OF QUALIFICATIONS

(QUALIFICATIONS COUNCIL)

ASSURANCE OF QUALITY

(ETQAs)

DRAWING UP OF CURRICULUM FRAMEWORKS
National Department of Education and other relevant departments, Institution

DEVELOPMENT AND PROVISION OF LEARNING PROGRAMMES
Provincial Education Departments, Providers, Institutions

(Department of Education, 1996a:50)

2.5.5 Concluding comments on an outcomes-based educational approach

The debate of whether to implement an outcomes-based approach or not, is an extensive one, because every approach or philosophy has its advantages and limitations for a particular given situation. South Africa has mainly opted for transformational

outcomes-based education because of the broader purpose to emphasise equity, access, redress, quality assurance and accountability in terms of economic and social development (Cockburn, 1997) on the one hand. On the other, to develop a curriculum that will provide the platform for knowledge, skills and values for innovation and growth for the 21st Century and for cultural creativity and tolerance for the African Renaissance (Executive Summary of Curriculum 2005, 2000:2).

Throughout the previous two chapters, a rational for using OBE and the advantages of using this approach to reform education and training in South Africa, has been discussed. There are also critics who highlight what they believe are the limitations of OBE. Some critics contend that it is primarily an approach used for social re-engineering. They say that if a ruling government prescribes the outcomes, leaving no affordable alternative forms of schooling for parents to choose from, education can become indoctrination. They warn that government can use education to achieve political aims of controlling its citizens (Schlafly, 1993). Dlugosh, Walter, Anderson & Simmons (1995:179) write that "*critics support the notion that OBE is a dangerous experiment in social engineering, that it teaches a set of values some parents do not embrace, that it 'dumbs down' academics, and that it is prohibitive in terms of overall cost to taxpayers*".

It is also feared that learners may become confident illiterates, due to the strong focus on co-operative work and a lack of specification of core academics content. In a diverse, pluralistic country such as South Africa, it is not always easy to achieve consensus amongst all role players. A democratic country, which South Africa is intended to be, should leave enough alternatives of private schooling for parents who fear that government will not provide the values they believe in (Van der Horst & McDonald, 1997:16).

Furthermore, critics argue that to implement OBE in a developing country like South Africa, is very expensive and that there are other very basic needs in terms of housing and health, which have to be addressed first. This of cause is a debatable issue, because general education is also a basic need and right of all learners, which can contribute to solving problems associated with basic health for example. Implementing any new educational initiative is expensive. Thousands of teachers have to be retrained, learning materials and resources have to be developed and distributed, which is a very expensive exercise. The in-service training will be a mammoth venture, but is of the

utmost importance for a sophisticated approach such as OBE to succeed. In-service training will not only have to address the understanding, new language and labels, methodologies and assessment of an OBE approach, but as described in Chapter 1, also the low levels of expertise of many teachers in specific learning areas such as mathematics and science. Having taken into account the all encompassing impact of OBE, as well as the low levels of competence of many teachers in South Africa, policymakers driving the reform for their own agendas, should not ignore the voices of teachers and specialists in the field of education. The stakeholders who actually work in the field of education on a day-to-day basis, call for a less feverish rushed and enforced implementation of the new curriculum in a particular grade, for all schools, in the same year. The principle of readiness should guide the implementation. Schools, school leadership and teachers should be given enough time and support from administrators to get themselves ready and organised for taking on the challenge of implementing a new curriculum (Technology 2005 Evaluation, 1999:165).

Another concern regarding OBE, are standards. Critics stated that the OBE principle of "success for all learners" meant that standards had to be lowered if both the smart and not so smart had to be successful. Spady (1998:52) reacted to this by saying that critics viewed standards and success as opposites in learning. He says that critics reason that one has to lower standards to get more success, or lower the rate of success if you intend raising standards. Critics did not realise that an alternative existed which Spady (1998:52) calls the "*expandable commodity/win-win*" elevator of achievement.

Other critics fear that standards will be lowered which will enhance mediocrity, because of the focus on the achievement of minimum criteria (Dlugosh, Walter, Anderson & Simmons , 1995:179). It is feared that gifted learners will be held back, until all the learners have achieved the minimum criterion. Spady (1998:53) points out that the commitment to create successful learning for all learners did not assume that all learners would end up with equal "minimums" and no more. He says that OBE was committed to raising expectations for all learners – including the smart – so that all learners could learn better and more. That had the implication that schools had to clearly state the levels of achievement and document how far learners had progressed in reaching the levels. Glass (1978:251) also attacks the advocates of minimal competence for two reasons, namely that the model has no foundation in psychology and that judges disagree on the arbitrariness of the values when minimal competence has to be identified. She argues

that the language of performance is pseudo quantification, a meaningless application of numbers to a question not prepared for quantitative analysis. To avoid this from happening the perceived minimum standards must not be set too low. Secondly, to challenge learners to maximise their potential, teachers will have to be skilled in the designing of learning opportunities for different learner abilities and the assessment of learners. Peters (1966) makes a persuasive argument that "*worthwhile activities have their own built-in standards of excellence, and therefore they can be evaluated according to the standards inherent in them rather than according to some end or outcome*" (in McKernan, 1994:2).

Outcomes-based education with its *behaviouristic history* is also the concern of some critics. The initiative of an outcomes-based approach in the South African context has it roots in the industrial, labour and training spheres and like other education approaches it may be judged in terms of other traditional scientific approaches where the focus is on the measurable, predictable, causal and thus also on the manageable (behaviourism) dimensions of performance and behaviour. Melton (1996:416) mentions that the fundamental principles of an outcomes-based approach and behaviourism have elements in common. This constitutes one of the points of criticism of an outcomes-based approach, in that predetermined outcomes, if too narrowly defined, might be positivistic and prescriptive in nature (Department of Education, 1997d:51). Jansen (1998:326) also warns that detailing specific outcomes will become a reminiscent of the 1970s "objectives movement" where the outcomes became the focus of over-specification. It means that hundreds of little objectives were being defined in an attempt to be precise about what was meant to be assessed. The teachers (both qualified and unqualified) then have to teach towards a minutiae of outcomes or objectives which can backwash into South African schools and classrooms as a technical, mechanical model of behaviourism.

The South African Curriculum Framework for General and Further Education and Training (Department of Education, 1995:29) warns about the disadvantages involved in taking a too narrow view of outcomes-based education. They (Department of Education, 1995:29-30) contend that

> if correctly applied, this shift in focus [from inputs to outputs] would encourage
> the development of flexible, relevant curricula. If applied too narrowly, the shift

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could emasculate the profound meaning and power of effective education and not do justice to the full humanity of the learner. In stressing what is quantitatively measurable, rather than the more complex and subtle qualitative outcomes of learning and teaching, there is a danger of ignoring long term goals which are most valuable.

The way in which outcomes are **selected** and **finally formulated** is therefore crucial to avoid narrowness and pre-scriptiveness. The critical outcomes and the specific outcomes in Curriculum 2005 are NOT narrowly defined, which allows for the flexibility referred to in the above quotation. The format adopted for a unit standard by the South African Quality Authority has attempted to marry both the generic and Learning Area specific outcomes in such a manner to avoid narrow and positivistic outcomes (Department of Education, 1997d:51).

This section has briefly reflected on some opinions and warnings from critics of OBE. Policy makers and implementers should take cognisance of valid warnings. Furthermore, they should seek sound continuous research feedback on the implementation and impact of OBE. Currently, the Minister of Education, Prof Kadar Asmal is setting in motion a national formative evaluation process. He achieved this through the appointment of the Curriculum 2005 Review Committee on 8 February 2000.

2.6 Summary

Chapter 2 has investigated OBE as a curriculum reform approach to education and training, against the background of educational philosophies which have impacted on curriculum work over the ages. A clear picture has been sketched of the transformational OBE environment and systems in which all pre- and in-service teachers will have to work as curriculum stakeholders and implementers. Any pre-service educator training programme will have to prepare and empower the future teachers for the mammoth task of making a paradigm shift in their own minds and everyday practice.

The next chapter will look in more detail into the philosophical characteristics of OBE. It will particularly focus on the implications of the OBE philosophy on best classroom practice in terms of teaching strategies and methods which will operationalise OBE. It will also look at the new Learning Area in Curriculum 2005, namely technology education

and its nature and structure in relation to appropriate strategies for facilitating learning from an OBE approach. The field of problem-based learning will be explored and related to the demands of both a new OBE paradigm and technology education.