

Occupational Qualifications on the NQF: Communities of Mistrust?

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Abstract

The relationship between qualifications required for the world of work (trades, occupations and professions) and the National Qualifications Framework in South Africa can best be described as uneasy. While labour market players who participated in the evolution of the NQF always worked with one goal in mind – the NQF as a framework for all kinds of learning – the reality has been quite different. Many of the structures and processes that support the NQF work against the uptake of such qualifications on the NQF.

The paper analyses occupational and labour market requirements, and makes a number of proposals which can be used to create alignment between the world of provision and the world of praxis. In particular it proposes:

- the use of an occupational framework, based on a classification of occupations, to link the world of work and the NQF
- a method of defining occupational competence and hence of structuring qualifications
- the use of unit standards to describe occupational skills
- the role of communities of practice within the quality assurance cycle.

This paper will deal with principles that can apply to a range of occupations including trades and professions.

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1. Introduction

The trigger for this paper was SAQA's call for research on the inclusion of professions on the National Qualifications Framework.

At best, this is a bizarre research question for 2005 going on 2006.

It was intended from the very beginning that trade, occupation and professional qualifications should be captured on the NQF (NTSI, Ways of Seeing the NQF, even SAQA documents themselves). The NQF was conceived as a framework of learning - not a framework of education and training interventions. People seem to have forgotten that.

But this question is an indication that the problems inherent in implementing the NQF have created an atmosphere of mistrust.

What the NQF meant was that those who had been outside the formal structures - the under-educated and the unemployed – would gain access to learning opportunities which would integrate them into the formal system. Also intended was that today's youth - graduates of schools, FET Colleges and higher education institutions - would have the relevant skills and knowledge to enter into the labour market either as employees, or increasingly, as entrepreneurs.

Whatever indicators are used to measure the NQF, the real question remains unanswered: are those who have been marginalised as the result of past inequities (which still remain with us) now in the main stream?

The NQF promised career progression. But does it achieve this?

While the education and training system, its institutions and its practices, are fairly well described and understood, there has never been a structured counterpart system for occupational development. The changing dynamics of the labour market, the influence of scientific management, the increasing pressure on companies to reduce costs, the emphasis on head counts and speeded up processes, have resulted in companies spending less time on integrating new entrants into the labour market and career development for their employees. Night school and distance education, which formed the basis of career development for many decades during the 20th century, are no longer viable for people who have to spend longer hours at work and longer hours in travelling to work. The lack of a robust occupational development model for these changing times has allowed the more traditional education paradigm to influence the evolution of the NQF (its systems, structures and practices) to a greater degree.

To provide the basis for creating a counterbalance, this paper:

- proposes and defines an occupational learning system
- examines its logic and shape

- describes how it could link to the NQF.

The ultimate purpose of creating a more robust NQF is to create a more rational basis for communities of trust. Whether the NQF and some of its stakeholders are able to accept and grapple with these propositions, is another question.

This is primarily a concept paper, perhaps even a manifesto. Some of the ideas have been fleshed out and, indeed, some are already being implemented. Because of the complexity of the subject I can do no more within the scope of a conference paper than present some of the highlights. Many of these will be expressed as a series of assertions. Details can be unpacked in further papers.

Others can then take the concepts and refine them and unpack the detail at a later stage.

These proposals, however, are not recent or impulsive. The thinking that underpins this paper has been evolving since 2002 when the Study Team report first came out. Nor are these just my ideas. A number of people have helped to develop and refine them and they have all, in their own ways, been driven by one key principle: how can we create a system which will enable those who have been disadvantaged by politics, financial constraints or social pressures to be integrated into a learning system which will:

- accelerate the redress of past unfair discrimination in education, training and employment opportunities; and thereby
- contribute to the full personal development of each learner and the social and economic development of the nation at large (RSA, 1995: 1).

1.1 The challenge

South Africa faces critical skills shortages in an environment where there is also huge unemployment. In addition, the labour market must address such challenges as employment equity, sustainable broad-based black economic empowerment and social development processes. Dealing with the scourge of HIV/AIDs also creates a demand for particular skill sets ranging from counselling to management skills for child-headed households. While there are a number of causes which relate to this situation, unless we find answers to the debate within the NQF, the NQF as the representation of an integrated learning framework will remain a pipe dream.

We need a parallel framework for occupations, based on a new logic for the acquisition, recognition and codifying of skills. The new framework should accelerate the description of the learning that stands behind the term "work experience" at all levels of work. This is necessary because South Africa has a deeply rooted societal and economic problem: it has to achieve employment equity and black economic empowerment targets at a rate which is faster than the slow and informal pace at which experience is normally accumulated for progression at work. It is only by describing learning that is traditionally accumulated at work that it will be possible to plan more accelerated learning by those previously discriminated against by apartheid. South Africa cannot wait for new generations of learners to progress at a measured pace through the formal education and training system if it is to leapfrog stages of development and attain growth rates that will halve unemployment and poverty in the next ten years. Already even the lowest level

workers in the workforce are having to upskill themselves in order to respond to the challenges of a changing workplace. They are being marginalised all over again, not only by global competition but also by new technology – and new technology demands new skills. The gaps in their knowledge and understanding need to be tackled in a way which acknowledges that they are not new entrants lacking both life and work experience. Current systems, including the current conceptualisation of the NQF, do not suffice. Innovation is required to tackle the problems.

So what is the logic of skills and what are the principles which underpin the new framework?

2. The Curriculum Vitae as Qualification

The logic of occupational competence is found in an everyday document: the curriculum vitae or CV.

The curriculum vitae is a 'qualification'. In terms of the NQF it is a record of life-long learning. It is the instrument which is used to adjudge the suitability or worth of a person for a particular purpose. It becomes the basis for deciding if this person qualifies for the job or service.

When employers embark on the selection process for a vacant position they broadly use two criteria:

- Does the applicant have the relevant qualification?
- Does the applicant have the requisite experience?

After verifying the qualifications as a first stage, employers will spend considerably more time evaluating applicants' experience to determine if they have the right kind of skills. Work experience forms the larger portion of the CV for anyone with some years in the labour market and the nature and type of work done is an indication of the kind and currency of the person's skills. Evaluation of work experience also forms the larger part of the interview process.

Suitability for the world of work is based on having sufficient proof of having acquired the necessary skills and contextual¹ knowledge to operate effectively within the organisation.

A barrier to entry for many newly qualified graduates in a labour market where there is an oversupply of such graduates is the lack of requisite experience. The absence of any work experience indicates a lack of work-related skills.

Unless the employer takes a longer view of the appointment, the lack of experience generally means such candidates don't even reach the short list.

¹ Contextual knowledge relates to the specifics of a particular application of the skill – the specific materials, product, technology, methodologies, practices or even organisational requirements, policies and rules

Implicit in the early conception of the NQF was the notion that life-long learning could be codified into forms of recognition (ie qualifications) which summarised the formal and informal learning that a person had acquired.

From a systems perspective the idea of defining outcomes (specific, exit or critical) is eminently suited to arriving at qualifications of this nature.

So why doesn't the NQF work for labour market needs?

What went wrong?

To illustrate some of the difficulties we have with the current framework, I will make use of the three qualifications registered at NQF levels 5 and 6 in Master Craftsmanship. The development of these qualifications had very clear labour market objectives:

- Create a development and career path for artisans or crafts people
- Increase the level of current technical knowledge and skills at the application level, particularly in a world of constant technological change
- Provide the knowledge and skills to establish and run sustainable small businesses thus creating employment and sustainable livelihoods
- Create a cadre of people who would develop the next generation of apprentices or learners (ie people development skills)
- Embed in the qualifications a focus on quality of workmanship and service
- Set up a professional association of master artisans/craftspeople to monitor quality of the education, training and assessment processes.

Although the design of the qualifications meets, or ensures that they have the potential to meet, these clearly defined objectives, and although the qualifications are registered, SAQA has now indicated that they need to be revised on the basis that they don't comply with the 60:40 rule. In addition, there are significant systemic issues which bedevil the design, development and implementation of learning programmes leading to these qualifications. The reality is that the definitions in and the implementation of the NQF has led to a disconnect between labour market needs and the NQF.

Briefly the issues in this disconnect can be summarised as follows:

- The NQF organising fields do not easily link to labour market needs
- SAQA definition of qualifications are labour market unfriendly
- The design and definition of quality assurance bodies and quality assurance processes create implementation problems
- There is no systemic link between the labour market and the NQF, ie no overarching framework for human resources development in relation to national strategic needs or priorities.

Each of these issues is discussed below.

2.1 *The organising fields and the definition of qualifications*

The first disconnect between labour market needs and the NQF lies in the lack of accommodation of labour market needs by the NQF organising fields and SAQA definitions of qualifications.

2.1.1 **The NQF organising fields:**

The organising fields provide little guidance in the conceptualising of occupational competence, particularly in the higher education and training band. This reflects the fact that they were primarily constructed in terms of knowledge taxonomy.

The Master Craftmanship qualifications could have been classified in any of a number of fields depending on the nature and content of the particular trade, including:

- Field 03: Business, Commerce and Management Studies
- Field 05: Education, Training and Development
- Field 06: Manufacturing, Engineering and Technology
- Field 08: Law, Military Science and Security
- Field 11: Services
- Field 12: Physical Planning and Construction (RSA, 1998: 6)

Occupations often cut across such divisions. The Master Craftmanship qualifications are actually a generic qualification type and should have been registered in the same way as a generic BA or BSc. But because they are occupational qualifications they had to be registered for a particular field. For practical reasons unrelated to the purpose or design of the qualifications, the electrical sub-field was chosen.

But in essence this solution was a form of subterfuge to deal with cultural asymmetry: while a BA is a generic qualification, a Master Craftmanship qualification is not.

2.1.2 **The SAQA qualification definitions:**

The second issue which is still unresolved is the issue of qualification types. The three Master Craftmanship qualifications reflect a carefully designed progression and development of skills. They were constructed according to the following logic based on the NSB regulations of 1998:

NQF Level	Qualification Progression			
6	Further 120 or more credits			Master Craftmanship Level 3
5	Further 120 or more credits		Master Craftmanship Level 2 Diploma	First Degree
	Further 120 or more credits	Master Craftmanship Level 1 Certificate*		
4	Further 120 or more credits	Artisan level 4		

During the registration process the working group was informed of the 60:40 rule. As we understand it, the rule suggests the following:

The “60:40” principle states that unless two qualifications differ by 60% only one should be registered. It has a corollary which states that only 40 % of one qualification can be used as credit towards another qualification.

The principle was developed, as far as we understand it, because some NSBs, notably NSB 06, were faced with having to register a multiplicity of qualifications all with very similar intent and purpose at the same level of the NQF. They were also faced with several sectors trying to register the same kind of qualification on the NQF, eg fitter qualifications for the engineering sector, the mining sector, the chemical sector and the agricultural sector. The principle (actually more a rule of thumb since it was never formally published or described) thus came into use to deal with similar qualifications at the same level of the NQF. It was discussed at Inter-SGB meetings but was never clearly articulated. One of the issues that was not clarified was the basis on which the 60:40 calculation was made. Was the percentage based on:

- a proportion of the qualification credits
- the full 120 credits for the qualification
- the number of unit standards
- the credits of the core, since fundamentals are largely the same
- the combination of core and elective unit standards?

It seems that the most likely way this principle is interpreted is that 60% of the credits for the qualification, ie the selection of unit standards, must differ by 60%. Since fundamentals form a minimum of 30% of a 120 credit qualification and the choice of fundamental unit standards is limited, it seems logical that one only needs a thirty percent difference in credits for unit standards in the core to make qualifications different. But this has never been clarified nor confirmed.

Nevertheless, the Master Craftsmanship qualifications needed to have additional credits added to them to make them conform to the 60:40 rule.

	Credits carried forward	Actual number of credits	Required number of credits
NQF 5 Certificate		120	120
Credits that may be carried forward	96		
Credits required in NQF Diploma		144	240
Credits that may be carried forward	144		
Credits still required in NQF Degree		216	360
Total credits required for 360 credit qualification		480	

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The regulations and the implementation of the regulations oppose the development of suites of coherent occupational qualifications based on a carefully crafted progression in terms of skills and knowledge.

Apart from the impact of the 60:40 rule, the definition of qualifications on the NQF results in a fragmentation of occupational qualifications.

The NSB regulations define qualification types as:

- a. The Authority shall register a qualification as a National Certificate at levels 1 to 8 where it has 120 (one hundred and twenty) or more credits with 72 (seventy-two) credits at or above the level at which the certificate is registered:...
- b. The Authority shall register a qualification as a National Diploma where it has a minimum of 240 (two hundred and forty) credits, of which at least 72 (seventy-two) credits shall be at level 5 or above.
- c. The Authority shall register a qualification as a National First Degree where it has a minimum of 360 (three hundred and sixty) credits of which at least 72 (seventy-two) credits shall be at level 6 or above. (RSA, 1998)

The impact of these regulations has been to fragment occupational qualifications. For instance, the only way to design a replacement for trade qualifications (which take between 2 and 4 years) is to have 2 – 4 separate qualifications which add up to the occupation.

In an attempt to deal with this fragmentation, SGBs and Field 06 adopted the practice of indicating in the *learning assumed to be in place* section that the determination of the credits for the current qualification assumed the acquisition of the knowledge and skills reflected in the qualification at the previous level.

This practice is no longer accepted by SAQA. The argument is that each qualification must be a qualification in its own right and that the *learning assumed to be in place* section should describe the 'entry' skills required for the qualification. The fact that such entry skills can be described as a qualification is not considered acceptable logic.

Many of these decisions are based on a module-based or programme-based paradigm. Unit standards are viewed as discrete and interchangeable blocks – a Lego block mentality - and qualifications are viewed as an ad hoc assembly of interchangeable blocks. Many unit standards are constructed as descriptions of occupational skills and competence where each unit standard may be supported by a number of modules, courses and work experience. The coherence of a competence-based qualification is based on the interaction of a range of skills sets and kinds of knowledge integrated into an overall assessable performance yielding a product or service at the end.

This mismatch between a module- and programme-paradigm and occupational paradigms leads to considerable tensions between the developers and the evaluators of submissions.

Then, to add more confusion (and tension) to the process, qualification developers are faced with arbitrary rules based on the terms of reference of quality assurance bodies. A qualification at NQF level 5 may not include, in the fundamental and core elements of the qualification, unit standards leading to credits which relate to NQF level 4. This is

because the quality assurance body (read the HET band ETQA) has no jurisdiction over the learning in the other band (read FET band).

The upshot of all these issues is that a set of qualifications that was crafted as a careful progression from one level to the next, that was designed to use the NQF levels to build up expertise in chunks, allowing the learners to act as practitioners, to perform services or to produce a product, while enabling them to generate an income and to employ other people before they embark on the next learning step – is deemed not to conform to NQF requirements.

The frustration of people involved in the development of occupational qualifications, as well as that of users (providers, learners and employers) is beginning to create a deep sense of mistrust.

2.2 Conceptualisation of quality assurance as simply the quality assurance of education (and, perhaps, of training)

The second disconnect between labour market needs and the NQF is that the design and definition of quality assurance bodies and quality assurance processes create implementation problems.

Defining quality assurance in terms of education and training (ETQA) already constrains the quality assurance process to a very narrow part of the overall process. The NQF was defined as an ‘integrated framework of learning achievements’. Clearly, learning stretches beyond formal education and training processes. Furthermore, restricting the quality assurance bodies to the General and Further education and training bands on the one hand and to the Higher education and training band on the other, has resulted in strained relations between the quality assurance bodies and other actors and role players within the NQF. Sector Education and Training Quality Assurance bodies and professional associations have found it very difficult to co-exist with the band ETQAs. The Study Team report indicates some of these problems. Buttressing legislation subsequent to the SAQA Act has exacerbated the problem. Professional bodies, particularly but not only non-statutory professional bodies, have been virtually pushed out of the NQF. The definition of roles effectively excludes such bodies from meaningful participation in the NQF.

Professional bodies through their membership, the maintenance of professional standards and their active role in the market would provide an ongoing quality assurance process both in feeding forward, ie providing guidance to changes, shifts and trends which will impact on the qualifications, the curriculum and the content of provisions, as well as in feeding back to the NQF, ie the quality and the impact of the learning processes.

The draft Higher Education Policy document articulates the proposed relationship between the band ETQA and these other quality assurance players quite clearly:

- “In discharging its responsibility, the CHE may work in collaboration with relevant statutory and non-statutory professional bodies and agencies.” Ministry of Education, 2004: 8)

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The word “may” indicates clearly that there is no compulsion for the CHE to work with labour market actors such as professional bodies, let alone SETAs. Nor can one say that the dropping of the “training” appellation in the higher education band is entirely accidental. Learning processes related to the development of occupational or professional skills do not, it appears, have any relevance in higher education.

This sharp, continuing divide is in essence a rift valley, further fuelling the mistrust between NQF actors and agencies.

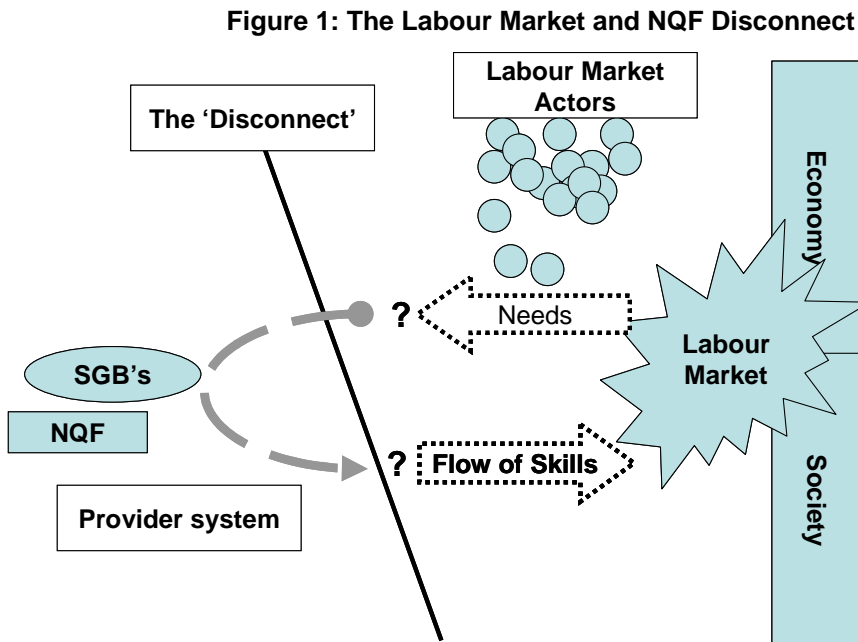
2.3 *The lack of an overarching implementation framework – HRD strategy*

The major reason for the disconnect between the labour market and the NQF is the lack of an overarching framework for human resources development in relation to national strategic needs or priorities.

Hinted at in the previous two points is the lack of an overall systemic vision of the purposes of the NQF. Two of SAQA’s objectives relate to this overall vision. SAQA’s objectives include the following:

- accelerate the redress of past unfair discrimination in education, training and employment opportunities; and thereby
- contribute to the full personal development of each learner and the social and economic development of the nation at large

The figure below depicts the poor systemic links between the elements of the system to develop human resources in South Africa.



The NQF is a tool that has been only imperfectly used to address the nation’s human resources development needs. The qualifications and standards represent a tremendous amount of intellectual capital – but that capital is not being applied to create the changes required and at a fast enough rate for those people who have been, and still are, the most marginalised.

At all levels and in all aspects of the overall system there are fractures which reinforce this disconnect. Instances of this are:

- visualising standards generating bodies as simply providing input to the NQF and not involving them in the quality assurance of the learning interventions
- quality assurance which focuses on programme approval and not on the impact of the learning
- the lack of a management system for the learning system.

The infatuation with qualifications of many involved in the NQF has led to an overemphasis on large scale learning programme interventions such as learnerships. Other forms of learning recognition and other learning programme interventions get short shrift. The watch word and hence the focus of the quality assurance systems should be 'just-in-time, just enough' to the largest number of the most needy.

This is not meant to suggest that it is SAQA's role to make the changes; rather that those tasked with intervening, eg government departments, state agencies, SETAs, special interest groups and national and regional initiatives make better use of the NQF – not just at the level of qualifications but also at the level of unit standards.

Overall the separate elements of the system have tended to operate in a way that seems to be designed to entrench past practice, past demarcations and current power relationships. These strategies have clearly led to communities of mistrust. While in some instances innovative ways have been found to solve these large social and economic problems, they are based on the commitment of the individual agencies, and the drive and vision of individuals, rather than on the system as a whole.

So how do we transform the system?

3. The Characteristics of an Occupational Learning System

Let us therefore set aside the NQF for the moment and consider the requirements of a system for dealing with labour market needs.

The country is awash with comments from leaders about the critical shortage of skills, scarce skills and an inadequate capacity to deliver. The starting point for the system we wish to describe is therefore skills, the determining of skills needs, the acquisition of skills and the codifying and describing of skills. This section looks at the nature of skills and the relationship between skills and occupations.

This Occupational Learning System would be defined by:

- National economic and social development imperatives
- The clustering of skill sets into occupations
- The acquisition of occupational competence
- The progression within an occupational grouping.

Each of these points is examined below.

3.1 *The Occupational Learning System is defined by labour market needs*

The labour market needs to be seen broadly and includes not just the economy but also the social and political spheres – wherever people engage with the challenges of life – life at work, life at home, life in the community and the particular challenges that each person has, be it illness, disability, needs or behaviours in the family group. It should also be seen from a national perspective and the achievement of the national development strategies.

Skills are not acquired without purpose. Skills are required to successfully interact with reality. The reality is defined by the interfaces between the practitioner and the operating environment. Such interfaces include equipment, other people, systems and the environment in general.

Skills have cognitive and physical dimensions – they are informed by formal knowledge but in turn also generate knowledge. Skills are required to perform tasks, duties and activities. The labour market is organised by defined collections of skills. At the lowest level of organisation these are called jobs; at higher orders of classification they are referred to as occupations.

Within organisations and industries, jobs may be defined and categorised, mostly for purposes of organising work and determining pay. This limits their usefulness in terms of the Occupational Learning System (OLS). So a broader classification system is of greater interest.

Occupation is a generic term for collections of skills for particular purposes and it includes a wide range of occupations including the trades and the professions. The South African Standard Classification of Occupations (SASCO) is used to collect statistics and determine labour market trends. It, in turn, is based on an International Standard Classification of Occupations (ISCO). SASCO (Statistics South Africa, 2003) defines skills as:

- the ability to carry out the duties and tasks of a specific job.

Furthermore:

- A **job** is defined as a set of tasks and duties to be performed by one person, while
- An **occupation** is defined as a set of jobs with similar sets of tasks.

Although the SASCO does not define the actual skill requirements for the different jobs or occupations which it lists:

- A **skill level** is defined as a function of the range and complexity of the set of tasks or duties involved.

A skill level is measured by means of formal education and experience. Four skill levels are defined within each occupational category.

SASCO classifies occupations into 9 major groups. The major occupational groups are:

1. Legislators, senior officials and managers
2. Professional

3. Technicians and associate professionals
4. Clerks
5. Service workers and shop and market sales workers
6. Skilled agricultural and fishery workers
7. Craft and related trades workers
8. Plant and machinery operators and assemblers
9. Elementary occupations
10. Armed forces, occupations unspecified and not elsewhere classified and not economically active persons.

It further sub-divides occupations into

- 30 sub-major groups
- 153 minor groups.
- 448 unit groups, and
- approximately a thousand sub-unit group occupations.

Sub-unit groups are often specialisations.

Some of the information in SASCO is dated. Countries around the world are preparing themselves for an update of ISCO, last updated in 1988. But the logic remains valid.

What SASCO in its current form doesn't provide us with is a description of the skills, tasks or duties related to each occupation. Nor (other than for apprentices) does it provide much information of intermediate stages of occupational development.

3.2 *The Occupational Learning System requires the usage of job and occupational titles*

The proposed Occupational Learning System would further be defined by occupational titles which describe the requisite skills sets for each occupation.

Job and occupational titles create identity for people within the labour market. The importance of this identity in the past can be seen in the number of last names based on occupations. The identity element is reinforced in many ways: It is a requirement of many documents that people have to fill in; Employers advertise vacant positions by using occupational titles.

Where no formal occupational title exists, people will develop one to describe a particular role, eg girl Friday to represent an undefined set of mostly administrative support tasks.

Some occupations may require the person to be registered in one form or another – the occupation becomes a licence to practice. If the skills are not kept current, ie if the person no longer performs the occupation regularly or if the person does not maintain the laid down standards, the registration can fall away. This registration is often a requirement where the public's health and safety is at risk but has also recently been extended into other fields such as that for financial advisors.

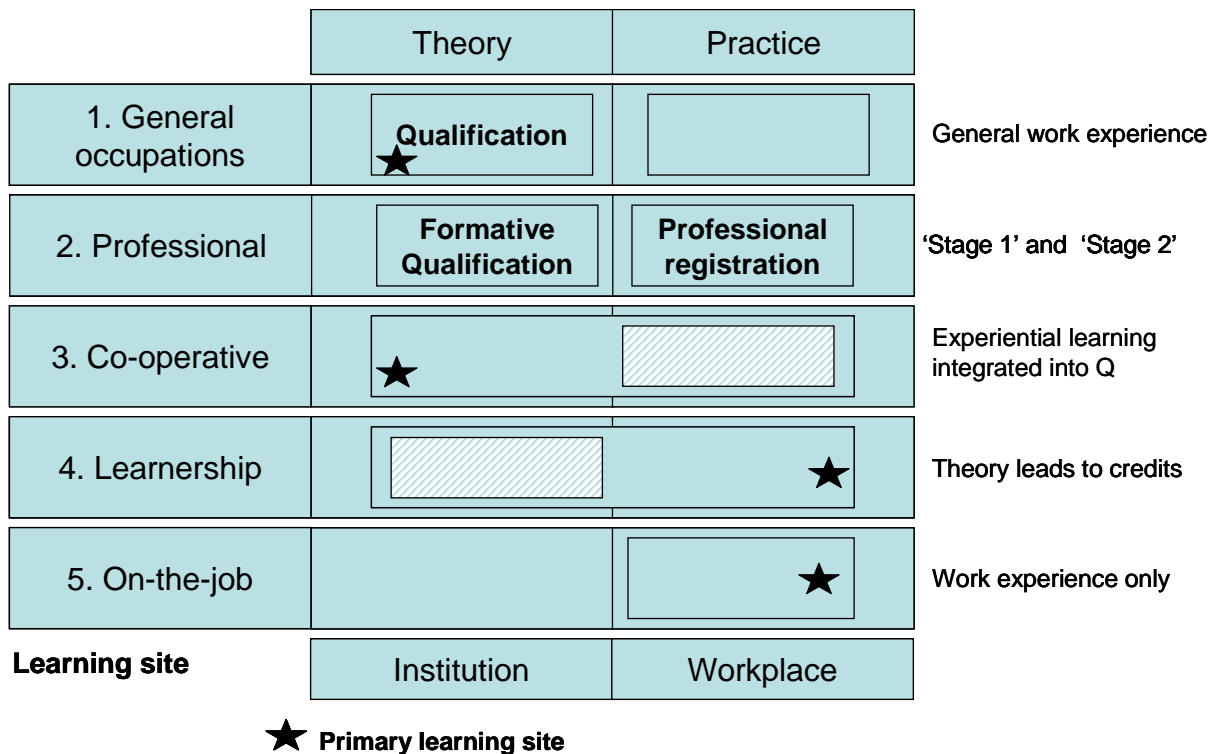
3.3 Models for the acquisition of occupational competence

The proposed Occupational Learning System would further be defined by the ways in which occupational competence can be acquired.

Learning for occupations is not a new phenomenon. We have several models which are currently in use and most of them have a long history and are in many ways cross-cultural. From an examination of the key features of such acquisition models we can conclude that occupational competence is based on the acquisition of the requisite formal knowledge and experience.

There are, however, a number of models for ways of achieving this:

Figure 2: Models for obtaining occupational competence



All but Model 5 demonstrate a two-component process for obtaining recognition for occupational competence: a theory or knowledge stage and a work experience stage. The theory or knowledge acquisition stage may lead to the acquisition of a separate qualification (Models 1 and 2) or credits towards a qualification (Model 4). In the case of general occupations the work experience component is ill-defined, ranging from sink-or-swim processes to undefined internships providing some support and guidance.

Model 3 demonstrates how work experience forms a part of the qualification. Qualifications based on this model are generally offered by universities of technology which focus on a range of occupational learning programmes. Many learners in South Africa find they cannot complete their qualifications because of the lack of opportunities in workplaces. In some cases this type of experiential learning is quite ill-defined while in others it is well-regulated, often with the involvement of the professional or occupational association.

3.3.1 Models for workplace learning within the Occupational Learning System

Workplace learning is generally based on the apprenticeship paradigm. This form of learning can be typified as a relationship between the expert practitioner and the novice. The role of the expert practitioner is to model (demonstrate), support and fade. The teaching is essentially invisible and silent. The purpose of the process is to induct the novice into the 'community of expert practice' (Berryman, 1998: 1²).

3.3.2 Communities of practice

While the apprenticeship paradigm forms a discrete model, it is not the only method of acquiring occupational competence. Occupational competence is not a fixed point in time.

Anthropologists Jean Lave and Edwin Wenger coined the term 'community of practice' while studying apprenticeship as a learning model. Wenger indicated that the origin of the concept was not based in sociology but in learning theory. Apprenticeships are generally seen as a relationship between a student and a master, but their studies of the apprenticeship system revealed a more complex set of social relationships through which learning takes place. These relationships are mostly with journeymen and more advanced apprentices.

"The term community of practice was coined to refer to the community that acts as a living curriculum for the apprentice. Once the concept was articulated, we started to see these communities everywhere, even when no formal apprenticeship system existed." Wenger: 2001: 1).

Communities of practice have existed, and continue to exist, formally as trade unions and as professional associations and bodies.

Linked to the above research the Institute for Research on Learning (IRL) studied how people learn and how they can improve the learning process. What they discovered turned their initial notions upside down. Based on these experiences they came up with seven principles of learning:

1. Learning is fundamentally social
2. Knowledge is integrated in the life of communities
3. Learning is an act of participation
4. Knowing depends on engagement in practice
5. Engagement is inseparable from empowerment
6. "Failure" to learn is often the result of exclusion from participation
7. We are all natural lifelong learners (Henschel, 1999: 1³)

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I have quoted all the principles because this provides the essence of what an occupational framework needs to incorporate. Assessment of individuals in isolation from the community in which they operate also short-changes the type and nature of occupational competence.

It also provides an insight into what underlies many of our 'scarce skills' today. In terms of the challenges facing South Africa, one of the primary challenges is to include those who were excluded previously. Employment equity, affirmative action and broad-based black economic empowerment are all strategies to redress power relationships. Following on from the principles listed above it becomes clear that we have to encourage the development of networks to create the communities of practice that are key to the development of occupational skills and knowledge. This is a direct analogy to the peer-review mechanism used to test academic research.

3.3.3 Acquisition of skills

The acquisition of skills in an occupational context is dependent on three factors:

- Exposure to real-time, real-life problems
- Practice to change conscious control to mastery
- Experience to apply the skill in a variety of conditions and sites

Quality assurance and assessment of this type of learning needs to take into account more than just a once-off successful performance. Consistency and confidence are prerequisites for occupational competence.

But such competence is not a fixed point – people continue learning and advance their skills and knowledge; people may change positions and as a result require new knowledge and skills; new technology may cause changes in the way an occupation functions and as a result require new skills sets.

3.3.4 Progression in the occupational learning system

The proposed Occupational Learning System would further be defined by progression within an occupational grouping.

Formal routes to progress on a career path generally involve the acquisition of additional formal knowledge and theory. This used to be done through the night school form of part-time learning. Other options have emerged to fill the gaps. These include a range of possibilities ranging from formal off-the-job courses, to distance learning. Usually this type of learning is required when advancing to another level of the occupational hierarchy, eg from artisan to technician, or from one type of occupation to another, eg from technical to managerial.

In general, however, we can postulate that progression across an occupational divide is dependent on the acquisition of a new 'package' of knowledge and theory. We could term this the theory threshold. Without the acquisition of this formal knowledge the development of the skills is primarily ad hoc. (That people do in fact transcend these boundaries without this step should not detract from this principle.)

Informal progression can also be based on ad hoc courses, but often consists of an informal learning process based largely on experience, observation and simply 'diving in the deep end'.

But as stated above, occupational competence is not a particular point in time. Competent practitioners are continuously learning - the embodiment of life-long learning. They can do this by engaging in sharing ideas with others, by keeping up to date with the trade press and the newest developments, or by incorporating new materials and new technology into current practice.

3.4 Combining these characteristics into a system

What we have described is:

1. A way of classifying occupations
2. The nature of occupations and their value
3. Achieving occupational competence
4. Progression within occupations.

What we don't have is a systematic way of describing all occupations and the way in which the learning takes place. For this we need to consider:

1. Mechanisms and vehicles for the labour market to signal needs – the needs could be shortages in particular occupations, the emergence (and decline) of occupations, changing skills needs within an occupation. Employers through workplace skills plans and SETAs through sector skills plans are already doing this work. The difficulty has been that there is no simple, practical mechanism for working with the information.
2. Coherent methods of describing an occupation and occupational competence requirements.
3. Methods of codifying relationships between occupations, both horizontal (at the same level) and vertical (in terms of progression or articulation).
4. Mechanisms to adjust and incentivise provision to respond to changing needs. Some of these changes will be dictated by changing conditions in the labour market, others will be as the result of political priorities in terms of national strategy.

An effective occupational learning system will be dynamic, responding to a changing environment on the one hand, while developing a science and practical methodology on the other.

Of all the challenges facing an emerging economy such as South Africa (emerging in the formal sense of the word, and emerging in the sense of the re-creation of a nation), the greatest, surely, is the integration of the previously excluded into the normal activities of a market economy. This is the challenge that the NQF set itself. But by simply re-creating the systems derived from European tradition we will not succeed.

So how do we construct a dynamic occupational learning system that can respond to labour market needs?

4 Proposals

The occupational classification system described above needs to be extended to include additional tools to deal with capturing the relationship between occupations, the developmental pathway leading to occupational competence and progression in and mobility within occupations. This section deals with the key components of a management and quality assurance system that will govern the proposed occupational learning system. The system will consist of the following elements:

1. An Organising Framework for Occupations
2. National Career Path Framework (NCPF) and a National Awards Framework (NAF⁴)
3. Mapping skill levels on the National Career Path Framework
4. Modes of learning for occupational competence – a curriculum model
5. Linking the modes of learning to the provider system
6. Quality assurance of the occupational learning system

4.1 *Organising Framework for Occupations*

Capturing labour market needs in a dynamic fashion requires a tool to manage and track changes to occupations and their underlying skills and knowledge requirements.

While the standard occupational classification systems such as SASCO appear to be an attractive option, one does not lightly tamper with a SASCO. To do so would jeopardise the many uses to which it is put. As noted, too, it has become somewhat dated and does not include the full range of occupations found in the various sectors. Changes in the economy, technology, politics and society have also created new categories of occupation. Examples of this include the shift from manufacturing to service industries, the emergence of information technology and HIV-Aids have created new needs in the economy and society that require new skills sets, ie new occupations.

Paul Blackmore notes that “There is remarkably little agreement about the nature of professional expertise, how it may be conceptualised and how assessed” (Blackmore, 1999: 61). However, in an attempt to start this process the Department of Labour has developed an organising framework for occupations (OFO) that is a method of collecting information on scarce skills (occupations) and critical skills (new or “top-up” skills required by people in specific occupations) (Department of Labour, 2005b: 7f).

The OFO was based on the evolution of an ISCO-aligned revision to developed jointly by the Australian and New Zealand governments. The initial impetus came from Australia,

⁴ It is an unfortunate sounding acronym if it is pronounced as a word, but I wanted to retain some symmetry with NQF.

where the second edition of the Australian Standard Classification of Occupations (ASCO) includes additional useful information related to each occupation, ie the primary roles and skill levels, tasks and specialisations. It is worth noting that this second edition of the ASCO was developed jointly by the Australian Bureau of Statistics and the Department of Employment, Education, Training and Youth Affairs.

The OFO will extend beyond simply listing and classifying the occupations. Each occupation and specialisation in the framework needs to be supported by additional information. The information outlined in the ASCO, see above). Blackmore suggests the role, function and skill as categories to categorise approaches to occupational analysis (Blackmore: 1999: 62). Skills are seen to be a broader category that competences based on function skills “Whereas the term ‘task’ or ‘function’ refers to the job to be done, ‘skills’ refers to the human capacities that are required for successful performance.” (Ibid: 68)

By capturing and codifying occupations in terms of these categories within the framework, it becomes possible to collect information on labour market needs, to determine trends communicate these through to the provider sector and then later evaluate the impact of interventions on those identified needs.

The process of compiling the list of the framework by the development team and subsequently by SETAs has thrown light on areas that were previously not classified or where skilled work (the trades) or professional work has become stratified and support- or para-professional occupations have emerged. Increasingly, skilled workers and professionals concentrate on the high-level activities while routine and less critical work is performed by others.

The Department of Labour’s intention is also to change the learnership regulations to ensure that learnerships can only be registered against occupations in the OFO. This is a clear indication that this framework does create the basis of a practical management tool. In all likelihood learnership grants will in future only be paid out against occupations that have been identified against scarce skills. Another crucial benefit of this tool is that it creates a mechanism to deal with occupations that cut across economic sectors. Until quite recently economic sectors have been working in silos with little collaboration in cross-sectoral occupations. This tool allows the Department of Labour to manage cross-sectoral occupations in a more focused and coherent way.

4.2 *National Career Path Framework (NCPF) and the National Awards Framework (NAF)*

The National Career Path Framework (NCPF) and the National Awards Framework (NAF) complement the OFO as a management tool.

While the OFO provides a direct link to the labour market and its needs, the OFO is in itself insufficient to help manage the interventions. To do this we would need a mechanism that represents career path development. This framework would need to reflect the skill levels contained in the OFO. It also would have to include the development stages of an occupation, the progression along occupational pathways and the transition from one pathway to the next.

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The purpose of the NCPF and the NAF is to manage learning inventions for assessment and recognition of occupational competence and to map out development pathways to provide for progression and mobility for all of those in the labour market.

The first conceptual step to creating such a framework was based on the major groups in the SASCO (Statistics South Africa, 2003: 7). To indicate occupational development it was mapped to the proposed 10-level NQF.

Figure 3: Initial Mapping of a National Career path against NQF levels

Level	Occupational Types						
10	1. Legislators, senior officials and managers		2. Professionals			0. Armed forces, occupations unspecified and not elsewhere classified and not economically active persons	
9			3. Technicians and associate professionals				
8							
7							
6							
5	4. Clerks		5. Service workers and shop and market sales workers	6. Skilled agricultural and fishery workers	7. Craft and related trades workers ⁵		8. Plant and machine operators and assemblers ⁶
4							
3							
2	9. Elementary occupations						
1	9. Elementary occupations						

With this architecture in place, it becomes possible for labour market actors to map their specific scarce skills and occupations and the related occupational awards to an overall scheme. This then allows them to:

1. Develop sectoral career paths
2. Develop standards against which learner practitioners can be assessed by expert practitioners for occupational competence, and which trade, occupational and professional associations can use for registration of competent practitioners.
3. Target specific occupations for priority development to meet identified political, social and economic needs in a prioritised and accelerated manner.
4. Communicate labour market needs to the education, training and development system which can then use the information for programme, curriculum and qualification design or modification.
5. Enhance the quality and number of opportunities for work experience.

⁵ The boundary between trade and technician is becoming blurred with the emergence of higher level trades where the primary function is diagnostic. Mechatronics is an example. As electronics and sophisticated control systems become the norm, so the trades which were traditionally hand-skills based, will require greater levels of skills in working with data.

⁶ As with trades, sophisticated and large-scale manufacturing operations require higher level skills to oversee and manage these processes. The boundary with technician level work is also becoming more blurred here.

6. Clarify progression and mobility pathways within the labour market.
7. Provide a basis for dissemination of information to enhance decision making eg young people making career choices; funders making investment choices; employers seeking new recruits; in a way that can be easily understood by the public at large.
8. Measure the impact of education and training interventions against initial statements of need at a single employer, within a sector and/or nationally over time.

The NCPF allows us to devise appropriate awards for each occupational group and the various levels. I have chosen to use the phrase 'awards' to differentiate the recognition of occupational competence from qualifications obtained at education institutions. Some awards may be linked to a specific level on the framework while others may incorporate several levels of the framework - but the key concept would be that awards build on awards. Moving horizontally across the career path framework would require the development of skills and the acquisition of knowledge related to lower levels in the new career path. The trades and other occupations could be reconfigured to become meaningful "whole" qualifications again and not fragmented steps based on the plastic building block paradigm.

4.3 Mapping skill levels on the National Career Path Framework

A key part of the NCPF is the allocation of occupations to more than the four SASCO levels (Statistics South Africa: 2003, 5f). Our proposal contains 10 levels. Furthermore these skills levels would have to be supported by Skill Level Descriptors.

SASCO defines skill levels as a function of the range and complexity of the set of tasks or duties involved and measures them in terms of formal education and experience (ibid). The four SASCO skill levels would need to be extended and broken down further.

The NCPF has other purposes and would need to use more refined methods of arriving at levels. The level of an occupation on the NCPF would be a reflection of:

1. The complexity of the skills required
2. The *time-span of discretion* related to the occupational role, ie the longer the completion time of tasks, the higher the level of work (Jacques, 1989: 16)
3. The learning time taken by the average practitioner to master the skills and acquire the range of knowledge
4. The level of risk or criticality⁷ of the decision-making processes, the products or the services.

An indicative set of level descriptors for the Career Path Framework is provided in Annexure 1.

⁷ E.g. health, safety, cost, ecological effects

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It should be noted that while there may be some correspondence between the NCPF and grading systems within organisations, the level assigned to the occupation is for that occupation rather than for the particular role the practitioner may be carrying out in a specific organisation. The same would be true in industry for grading levels in bargaining council agreements on salaries and wages.

Based on an analysis of the proposed NCPF, two broad career paths emerge. The first pertains to rising levels of knowledge and skill underpinning expert performance in a specialised field of work, and the second relates to the broadening span of control within a context (eg an organisation, a community or a field of endeavour). Clearly there are overlaps but a specialist medical practitioner, eg a physician, and the medical practitioner who manages a hospital, although technically falling into the same domain, are actually on two different career paths, requiring different sets of skills and knowledge.

National Career Paths

	Descriptor	Specialisation Career Path	Management Career Path
10	High-level occupations and professions	Research professional	Strategic management
9		Professional	Senior management
8		Para-professional	
7	Mid-level occupations	Support professional, technologist, master artisan	Middle management
6		Technician, specialised sales, master artisan	Supervisory management
5			
4	Skilled, administrative and service level occupations and trades	Trades, technical, clerical, service, assistants, general sales	"Work group" management ⁸
3			
2	Support level occupations		
1	Entry level worker, elementary occupations		

Given the development needs in South Africa, one of the unresolved issues in terms of this proposal is the inclusion of entrepreneurs, not only in the sense of those who start up business ventures but also of social entrepreneurs. These are people who "act as the change agents for society, seizing opportunities others miss and improving systems, inventing new approaches and creating sustainable solutions to change society for the better". (Nonprofit Resource Center, 2005: 1)

⁸ In manufacturing and production environments this level is often reflected by the role description "team leader". Increasingly with changes in work organisation, specialists, middle and senior managers are also being referred to as "team leaders". In the interests of making the framework apply across all economic sectors, the term "work group manager" has been coined.

4.4 Modes of learning for occupational competence – a curriculum model

In describing the acquisition of occupational competence in section 3.3 above, we found that at the very least two learning processes are required: the acquisition of knowledge and work experience. This is an over-simplification. What is needed are three different modes of learning for three different purposes.

Developing coherent curricula in an occupational context requires three modes of learning:

- 1) Knowledge acquisition (general and contextual)
- 2) Development of practical skills (general and specific)
- 3) Workplace experience

These concepts have now been converted into a curriculum model (de Jager et al, 2005), details of which can be found in a paper presented at this conference by Santa de Jager and Ellen Huester.

The model allows us to fairly quickly and easily structure the learning requirements for a particular occupation in terms of the required *knowledge and theory*, the *practical exercises* to develop basic skills and the necessary *workplace experience* to develop the expertise or competence.

But beyond the development of a curriculum, this tri-modal model suggests how we can structure occupational qualifications for registration purposes.

1. General knowledge and theory relating to a an occupational group
2. Specialised and contextual knowledge and theory relating to the occupation and the selected specialisation of that occupation
3. Skills standards which describe the discrete sets of skills required by the occupation
4. Occupational competence standards which describe the overall occupational outputs in terms of outcomes and assessment criteria, integrating both the knowledge aspects and the skills standards into an overall set of requirements

From personal experience, the development of skills standards at higher levels of occupation, especially in the managerial field, becomes increasing difficult

4.5 Linking the modes of learning to the provider system

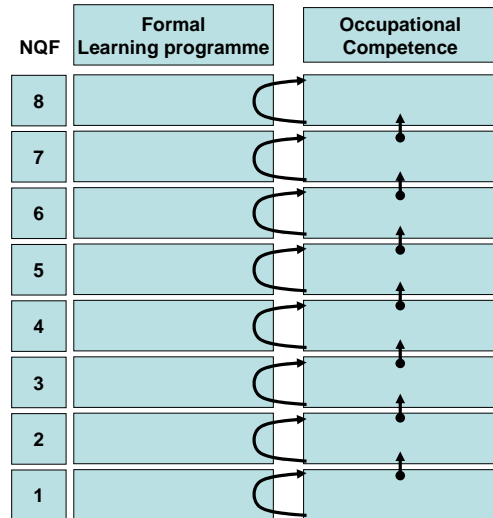
One of the key purposes of the occupational learning system is to clarify roles and responsibilities for the development of practitioners.

An intrinsic feature of this tri-modal learning model is that it identifies those elements which are common to a group of occupations based on the OFO. Much of what is general theory and knowledge is common to sets of occupations, eg all the engineering trades share common concepts. This means that the education system would more deal with broader ranges of learning; specialist providers would deal with the specialist and

contextual knowledge and theory and practitioners would provide the coaching and learner support in the workplace.

Progression up the career path will then be linked to the acquisition of credits or qualifications on the NQF as depicted in the figure below.

Figure 4: Progression along the career pathway

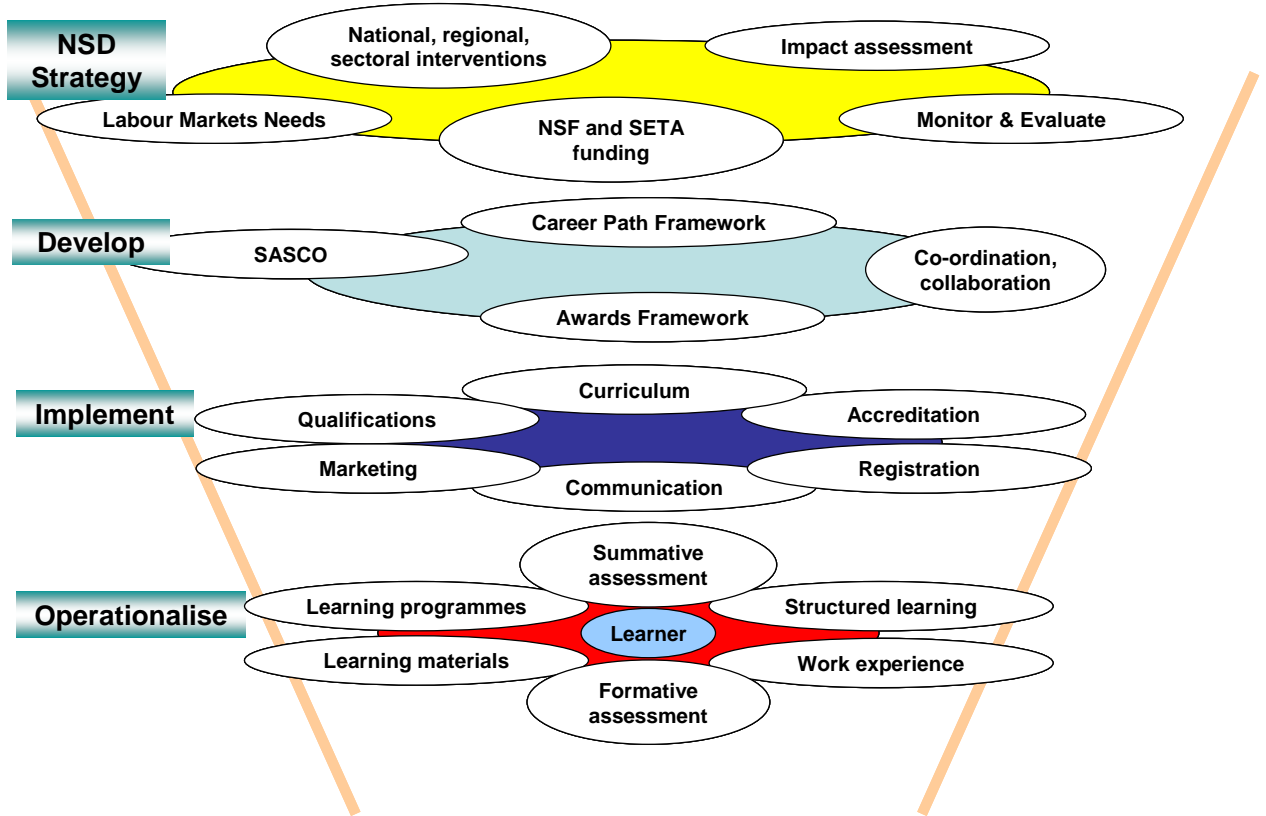


Since each mode of learning involves different processes, the education and training quality assurance practices need to be modified. What we would need is a model for education, training *and development* quality assurance. Based on this new model, appropriate quality assurance bodies would be reconfigured to deal effectively with each particular mode of learning.

4.6 Quality assurance of the occupational learning system

These proposals amount to a system to identify and respond to labour market needs. Since the system works on different levels and requires a range of processes to complete, quality assurance processes would have to be designed for the various levels and the various processes. It is not enough simply to focus on education and training.

The figure below is a conceptual model for the development of a quality assurance system for occupational learning. It is loosely based on a quality assurance model developed for a SETA to manage and quality assure learnerships. This model depicts processes and different levels of the OLS that need quality assurance. I have avoided developing structures, roles and responsibilities, since I believe that it is these issues which have bedevilled the development of solutions to these problems.



The quality assurance system for the occupational learning would be based on similar process loops as outlined above. At the very least they would deal with:

1. Labour market research, analysis, needs identification, monitoring, evaluation and impact assessment at a systemic level
2. Development activities, including standards and curriculum, partnerships, communities of expert practitioners
3. Implementation activities, including accreditation, registration of assessors alignment of activities between the various implementation partners (providers and workplaces)
4. The learning process (and expansion of education and training quality assurance)

Quality assurance at this level should not be conceptualised in the same way as manufacturing or other business systems, eg ISO 9000 series. Rather it should be conceptualised as a programme evaluation research. Mouton suggests there are five reasons for interventions failing. These are:

1. The intervention is inappropriate
 - not addressing the real problem
2. Implementation is poor
 - poor quality delivery
3. Not all members of the target group receive the intervention as planned or do not receive the same intervention
 - inadequate coverage
 - lack of standardisation
4. The intervention is appropriate, implementation is good but implementation is insufficient
 - diluted intervention
 - insufficient dosage

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5. The intervention is good, implementation is good and sufficient, but the target group is not receptive.
 - Lack of minimum necessary conditions for change (Mouton, 2003:2)

These reasons for failure should act as a framework for any quality assurance system. The quality assurance process should be based on programme evaluation methodologies, including impact assessment.

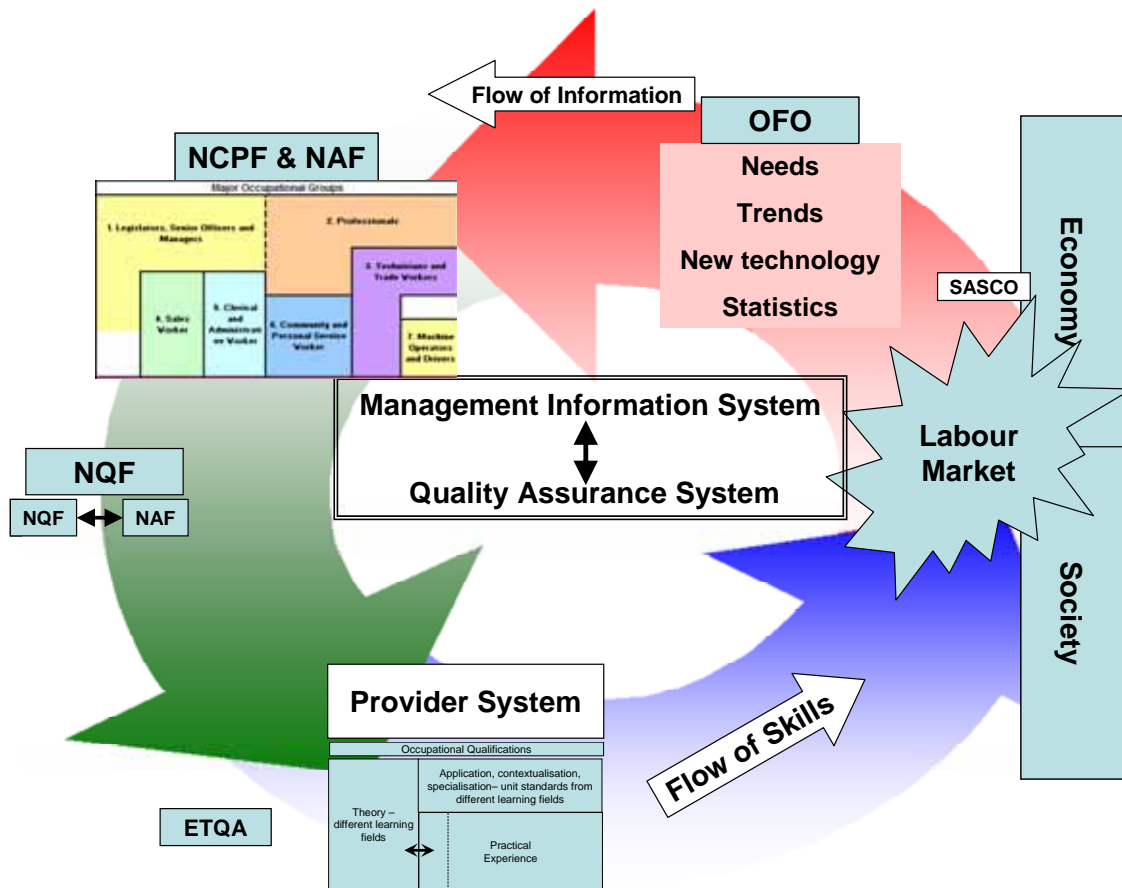
The role players in the quality assurance system must be extended to include users. By users we mean the labour market in general, but more specifically, government departments, state agencies, SETAs, special interest groups, national and regional initiatives and so on. But most of all we have to involve the community of practice. Professional associations and trade unions are structures. It is beyond the scope of this paper to work through all these issues but our final proposal would be to develop and institutionalise Communities of Expert Practitioners. These communities would play a vital role in securing their own occupation or clusters of occupations, setting standards, influencing curriculum, quality assuring assessment and maintaining occupational and professional standards, quality of service and ethical behaviour.

4.7 Summary

An occupational learning system to address scarce and critical skills needs in South Africa would have to consist of the following elements:

1. An Organising Framework for Occupations (OFO)
2. A National Career Path Framework (NCPF) and a National Awards Framework (NAF)
3. Mapping skill levels on the Career Path Framework
4. Modes of learning for occupational competence – a curriculum model
5. Linking the modes of learning to the provider system
6. Quality assurance of the occupational learning system, including Communities of Expert Practitioners

This can be summarised in the following figure:



5 Linkages to the NQF system

When we set about describing the occupational learning system we stepped away from the NQF to focus more closely on what this system should deliver. The occupational learning system contains many elements of NQF thinking but there are subtle differences.

If we were to answer the overarching question which triggered this paper, “How do we include professional qualifications on the NQF?” this section deals with the implications of our OLS for the NQF. Two points of focus emerge:

- Framework development
- Quality assurance

5.1 Framework development

Occupational development within the current national qualifications framework is proving difficult. The continuing, uneasy compromises to date are creating unsustainable tensions and blockages. To accommodate occupational learning systems in the framework itself, the following points could guide the process:

- 1 Review all elements of the NQF to include occupational development and progression, removing all barriers which try to emulate progression in the formal education sphere.

Occupational Qualifications on the NQF: Communities of Mistrust?

- 2 Create new qualification definitions which reflect occupational concerns. Occupations don't necessarily require degrees and diplomas but alternative qualification descriptors such as trades and professions would be welcome.
- 3 Adapt the NQF framework to include the career path framework based on classifying occupations and depicting occupational development and progression.
- 4 Revisit the regulations which govern the registration of qualifications and provide space for those qualifications which have an occupational intent.
- 5 Redefine the regulations which govern unit standards to define three types of standard:
 - Knowledge standards
 - Skills standards
 - Occupational competence standards.

The mapping to current SAQA requirements is summarised in the table below:

SAQA	Occupational Learning system
Essential embedded knowledge	Knowledge standards
Unit standards	Skills standards
Exit level outcomes and associated assessment criteria	Occupational competence standards

The notion that all occupational qualifications somehow fall below NQF level 6 (Department of Education/Department of Labour, 2002: 108) must be firmly rejected. What we need is two parallel yet inter-connected progressions.

Create the NQF to have two types of qualification:

1. Formal knowledge and theory and associated skills
2. Occupational competence based on appropriate levels of relevant theory

All occupations require some level of knowledge and theory. This can be specified either as a qualification or as specific credits at that level.

5.2 Quality assurance

One of the major reasons for tensions in the NQF is the flawed conceptualisation of quality assurance in the system. The following pointers could act as guidelines:

1. Reconfigure the quality assurance system, dispensing with the hegemony of band ETQAs
2. Develop quality assurance roles that can be fulfilled by a variety of role players including the community of practice, especially the professional bodies, both statutory and voluntary – and quite frankly if we don't get this right we can kiss the NQF goodbye.

The tri-modal curriculum also clarifies education and training quality assurance roles and responsibilities at a programme level, as illustrated in the following table:

Learning mode	ETQA body
General knowledge and theory	Band ETQA
Development of practical skills	SETA ETQA
Workplace experience	SETA ETQA
Assessment	Community of Expert Practice (the professional body)

Depending on the nature of the occupation and the capacity of the provider system, these roles could be assigned differently.

Clearly many occupations do not have representative professional bodies. In this case the relevant SETA (or in the case of cross-sectoral occupations, the SETA nominated to manage the occupational learning) could act as a proxy for such a body and constitute a Community of Expert Practitioners (CEP) for the occupation or groups of occupations. This would mean convening groups for standards setting, curriculum development and assessment.

Accreditation criteria would also need to be developed for participating workplaces, and these criteria would need to be sensitive to the capacity of small and micro enterprises to provide sufficient learner support.

This mechanism is necessary to involve non-statutory professional bodies who have been marginalised to a large extent in the Higher Education band because of the way the higher education legislation has been framed.

Programmes at education institutions have to remain responsive to labour market needs, by updating the content of their programmes as technology advances.

Quality assurance needs to be addressed very carefully. When it becomes an impediment to achieving the systemic purpose then it is not worth a candle. We cannot afford to have a quality assurance system which prevents learners from being certificated for trivial reasons, or is in itself so inefficient that learners have to wait for fourteen months to receive their certificates.

6 Conclusion

We started with the Qualifications for Master Craftsmanship as an example of registered qualifications on the NQF and indicated some of the problems related to their design and implementation. In terms of these proposals this occupational type would appear as a sub-major group of occupations on the Organising Framework for Occupations, along with description of their roles, functions and skills. Within the OFO the various sub-fields for the specialisation of Master Artisan/Craftsman would also appear.

The occupation would also appear as a progression in three phases on the National Career Path Framework and have three awards registered on the NAF. The Master

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Artisan Forum, a nascent organisation, would act as the Community of Expert Practitioners. Indications are that they would affiliate themselves with the Engineering Council of South Africa. This body would structure both ETQA activities in conjunction with the Higher Education Quality Committee (HEQC) and any relevant SETAs. The Master Artisan Forum would then become a fully fledged professional body registering and managing their membership and the profession as a whole.

The Master Artisan Forum would develop together with Universities of Technology a core curriculum, which would assemble modules for business, management, entrepreneurship, quality assurance, etc, from current offerings from other qualifications and study fields. For various groups of specialisation, they would then also determine the technical content of the learning programme, eg electrical, mechanical or printing.

They would then design practical exercises, work experience and assessment processes. General and specialist providers would then develop learning materials. Since most of the learners would be employed or self-employed, the learning programmes would be designed as distance education or block-release modules and would require project work done within the enterprise. The Master Artisan Forum would also select and accredit coaches, mentors and assessors. Quality assurance roles and responsibilities would also be allocated to the most appropriate body for each of the learning modes.

Finally we would hope that the system outlined here will reflect in people's CVs in a formal way, that occupational skills become a way of expressing experience.

7 Acknowledgements

The ideas developed in this paper would not have been possible without an intensive interaction with many people at different levels. These included:

- Various officials of the Department of Labour (past and present)
- Members of NSB 06
- Members of SGBs, particularly Manufacturing and Assembly Processes, Plastics Manufacturing, Food and Beverage
- Participants in the process to develop the Master Craftsmanship qualifications
- Various SETA officials
- Fellow NQF practitioners

In particular I would like to thank GTZ for their support at various stages in the evolution of these concepts. Without their support much of what we have achieved and still need to achieve would not be possible.

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Annexe 1

Level 1

- basic knowledge and understanding of the key features governing the work context
- an ability to use at a simple level the basic tools, equipment and instruments⁹ related to the occupation
- an ability to collect and organise information clearly and accurately and to report information clearly and accurately
- an ability to apply oneself to a given well-defined task under close supervision or to perform elementary work semi-autonomously

Level 2

- knowledge and understanding required to perform a job in an authentic work context
- a basic knowledge understanding of the occupation's key terms, concepts and purposes and of the principles which underpin the occupation's processes
- an understanding of relationships of own group as part of the organisational system
- an ability to use and maintain tools and instruments for the occupation
- an ability to contribute to processes and work within the relevant ethos
- an ability to identify the key elements of a problem and determine and apply appropriate solutions
- an ability to select and organise significant information and form a conclusion
- an ability to report on work-related issues clearly and in the required formats
- an ability to work in a disciplined and responsible manner in a supervised environment
- an ability to interact with others and to develop working relations within work context

⁹ Common tools and instruments covers not only hand and cleaning tools but can include keyboards, writing instruments, communication devices (telephones), data capturing devices such as scanners etc

Level 3

- a basic understanding of the occupation's role and purpose within the organisation or operating environment as a system
- an ability to measure converting conditions into data, quantifying events and phenomena measure conditions, and identify phenomena the environment using instruments and equipment
- basic occupational literacy skills¹⁰
- an ability to use basic procedures and operations to complete complex tasks
- an ability to use the above to select appropriate procedures to solve problems within given frameworks
- an ability to summarise, interpret and take a position on available information and provide explanations
- an ability to discuss and resolve problems within groups
- an ability to resolve day-to-day problems that are experienced in the occupation

Level 4

- a broad knowledge of the main areas of the occupation as well as the principles and theories which guide the occupation
- an understanding of the organisation and the conditions within the wider context
- an ability to interpret, convert, apply and to derive actions from text and/or operational symbols or representations
- an ability to plan complex activities and tasks and to allocate aspects of the task to others
- an ability to manage and take responsibility for the quality of work done
- an ability to apply the essential methods, procedures and techniques of the occupation/ field and evaluation techniques
- basic information gathering, analysis and evaluation skills
- an ability to communicate and present information reliably and accurately
- operate within clearly defined contexts and take decisions and responsibility
- an ability to evaluate one's own performance as well as that of others in the work group against given criteria
- an ability to assist others with aspects of the learning process

¹⁰Operational literacy = reading of symbols and representations related to the occupation eg music notation, engineering drawings, building plans, circuit diagrams, flow diagrams, maps etc

Annexe 1 -

- an ability to resolve all problems related to the occupation

Level 5

- an ability to conceptualise, plan and implement work processes that have a time span measurement between a week and three months
- a broad knowledge and understanding of the main areas of a level 5 occupation
- an ability to optimise work processes, products or services based on a methodical approach to analysing and correcting the problem
- an ability to manage quality of service or product, to encourage and sustain quality thinking in a team or work group
- an ability to maintain the efficiencies related to an occupational product or service
- an ability to convert occupational strategies into concrete plans, actions and evaluate the effectiveness of such interventions

Level 6

- an ability to conceptualise, plan and implement work processes that have a time span measurement between three months and one year
- a broad knowledge and understanding of the main areas of a level 6 occupation
- an ability to operate in contexts where the task is not always well-defined, requiring personal responsibility, initiative and decision-making
- an ability to conceptualise, plan and implement a project which investigates and resolves an issue or set of related issues that affect the overall performance of team, department or products or services

Level 7

- an ability to conceptualise, plan and implement work processes that have a time span measurement between one to two years
- a broad knowledge and understanding of the main areas of a level 7 occupation
- an ability to use the above to identify and deal with complex issues and problems systematically and creatively; demonstrated through the management of a domain which involves a range of processes, products or services
- an ability to deal with the ambiguities and contradictions of current theories and solutions and to evolve pragmatic strategies which produce effective and relevant results

Level 8

- an ability to conceptualise, design and implement work process that have a time span measurement between two and three years

Occupational Qualifications on the NQF: Communities of Mistrust?

- a broad knowledge and understanding of the main areas of a level 8 occupation
- an ability to use the above to identify and deal with complex issues and problems systematically and creatively; demonstrated through the implementation and evaluation of an intervention which addresses a set of identified problems established by a data gathering and analysis process
- an ability to

Level 9

- an ability to conceptualise, design, implement and evaluate projects or programmes that have a time span measurement of between three and five years
- a broad knowledge and understanding of the main areas of a level 9 occupation
- operate in complex, ill-defined, variable and unfamiliar contexts
- manage ones work autonomously professionally and ethically, exercising full personal responsibility and initiative
- an ability to use the above to identify and deal with complex issues and problems systematically and creatively; demonstrated through the completion of project or programme in which the learner has played a leading role and which addresses a set of identified problems and which is based on a research process.

Level 10

- an ability to conceptualise, design and implement projects at the cutting edge of the occupation/ field that have a time span measurement of between five and ten years
- a systematic, comprehensive and deep understanding of a substantial body of knowledge and theory at the forefront of a occupational context
- an understanding of the complex interplay of various systems and management of complexity
- an understanding of methods to strategise, resource and implement and sustain change processes,
- an ability to conceive, develop and implement systemic change or restructuring
- demonstration by portfolio of the implementation of a policy, programme or extensive project which has changed the conditions in a significant context (community, organisation, field of endeavour)