DOCUMENT RESUME

ED 367 835 CE 065 893

TITLE	Essential Skills and Generic Skills in the National Qualifications Framework. Consultation Document.
INSTITUTION	New Zealand Qualifications Authority, Wellington.
REPORT NO	ISBN-0-908927-42-8
PUB DATE	Nov 93
NOTE	35p.
PUB TYPE	Viewpoints (Opinion/Position Papers, Essays, etc.) (120)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	*Basic Skills; *Educational Certificates; *Employment Qualifications; Evaluation Methods; Foreign Countries; *Job Skills; Models; Standards; Student Certification; Student Evaluation; Vocational Education
IDENTIFIERS	*National Qualifications Framework (New Zealand)

ABSTRACT

This booklet presents the concepts of essential and generic skills and issues raised by their incorporation in New Zealand's National Qualifications Framework (NQF). The first section discusses the concepts of essential and generic skills. The second section addresses three major reasons for wider understanding and discussion of these concepts: curriculum and assessment requirements resulting from the New Zealand Curriculum Framework; need to identify essential and generic skills arising from the development of unit standards and qualifications spanning a range of occupations; and similar developments in the assessment and recognition of skills overseas. The third section raises the following issues that must be addressed before decisions on essential and generic skills within the NQF are made: the place for separate essential skills units in the NQF; recognition of essential and generic skills in the NQF at all levels; development of essential and generic skills in meaningful contexts; transfer of skills to new situations; and reporting of skills achievement. The final section presents four alternatives for recognizing essential skills in the NQF. These four models are the separation, adjunct, integrated, and combination models. Advantages and disadvantages are listed. Appendixes include 15 references, Record of Achievement (skills list), Ministry of Education essential skills descriptors, General Vocational Qualifications; Unit in Problem Solving, and glossary. (YLB)

NEW ZEALAND QUALIFICATIONS AUTHORITY
Mana Tohu Matauranga o Aotearoa

ESSENTIAL SKILLS AND GENERIC SKILLS

in the National Qualifications Framework

Consultation Document
November 1993

work & study

communication

physical

self management

numeracy

NEW ZEALAND QUALIFICATIONS AUTHORITY
Mana Tohu Matauranga o Aotearoa

ESSENTIAL SKILLS AND GENERIC SKILLS

in the National Qualifications Framework

Consultation Document
November 1993

NEW ZEALAND QUALIFICATIONS AUTHORITY
Mana Tohu Matauranga o Aotearoa
P o Box 160, Wellington. Phone: 0 -4 802 3000

Partnership

The New Zealand Qualifications Authority recognises that integral to its operations, both internal and external, is the need to be responsive to the aspirations, needs and concerns of the Maori people. The following will therefore be taken into account when implementing the principles and processes contained in this document:

- honouring the principles of the Treaty of Waitangi through exercising the Authority's power of government reasonably and in good faith, so that the Maori interests specified in the Treaty are actively protected;

- eliminating the gaps which exist in relation to the educational, personal, social, cultural and economic well-being of Maori people, and which do not result from individual or cultural preferences;

- providing opportunities for Maori people to develop economic activities as a sound base for realising their aspirations, to promote their self-sufficiency and to eliminate attitudes of dependency;

- providing for Maori language and culture to receive an equitable allocation of resources and a fair opportunity to develop, having regard to the contribution made by Maori language and culture towards the development of a unique New Zealand identity.

Responsiveness is an issue of equal importance both to the Maori people and other New Zealanders. The Qualifications Authority will operate in a way that ensures that responsiveness is part of everyday operations.

Contents

This booklet presumes an understanding of the National Qualifications Framework and the New Zealand Curriculum Framework. Information on the National Qualifications Framework can be obtained from:
Communications Manager, New Zealand Qualifications Authority, P O Box 160, Wellington
Information on the **New Zealand Curriculum Framework** can be obtained from:
Ministry of Education, P O Box 1666, Wellington

Introduction

Increased competition in international markets, changing technologies, and new production processes require a workforce capable of operating across traditional occupational boundaries. Employees and management need a range of skills that allow greater adaptability and productivity. Similarly, changes in other aspects of life, including unpaid work, require new skills that impart greater flexibility and personal creativity.

Essential skills are those identified by the Ministry of Education in the *New Zealand Curriculum Framework* as fundamental for learners in achieving their full potential and participation in society. They may be developed in different ways and learning environments, but are transferable to new situations. There is a high level of agreement among educators, the business community, and industry about the set of skills that is necessary. Clearly, the *basics* - communication and numeracy skills, referred to by previous generations as *the three Rs* - are valued by everyone. Equally, there is agreement in all sectors that such other skills as problem solving, decision making and teamwork are equally important in contemporary society.

A number of countries are developing systems for recognising and assessing these key skills. New Zealand has been piloting systems that document such skills. The *Record of Achievement* project has shown that it is possible to assess and report on them. The schools' *Curriculum Framework* positions skills alongside knowledge and understanding.

The set of skills identified in the *Curriculum Framework* as ***essential skills*** may, however, be considered as part of a broader set of ***generic skills*** applicable to the whole of education and training. Vocationally-specific skills, with applicability across a range of areas of employment, can be identified. For example, skills in the management of quality, driving, and occupational health and safety are ***generic skills*** for a wide range of occupations, but are not ***essential skills***.

It is important to determine the optimum way in which ***generic skills***, and the ***essential skills*** in particular, can be incorporated into the *National Qualifications Framework*.

This booklet discusses the concepts of ***essential*** and ***generic skills***, and gives background information on why there is a need to debate related issues. Ways in which other countries are giving emphasis to the same range of skills are examined. Many issues are raised and, in the final section, four alternatives for recognising ***essential skills*** in the *National Qualifications Framework* are presented.

How to Respond

All interested persons, groups, and organisations are invited to respond. These include schools, tertiary education and training providers, government agencies, industry,

Maori and Pacific Island people, parents, learners, and the wider community. Readers might consider a small, but representative group to discuss the issues and provide a collective response.

The issues presented in this consultation document need careful review and analysis. Respondents are invited to examine and expand them in order to provide the Qualifications Authority with a sound basis for incorporating ***essential*** and ***generic skills*** in the *National Qualifications Framework*. No preferred approach is indicated, as all alternatives have evident advantages and disadvantages.

Respondents may care to comment on the issues raised, the alternative models presented, or how they perceive ***essential skills*** and ***generic skills*** should be incorporated into qualifications in their fields of interest. The insert in this booklet could be used as an outline for your submission. It is based on the issues and models discussed later in the booklet. The form should not restrict a response. Replies may be made in more depth and in any format preferred.

Responses are required by **Friday 11 February 1994** and should be addressed to:

Essential and *Generic Skills* Responses
Policy, Research and Development
New Zealand Qualifications Authority
Box 160
Wellington

Concepts

What are *Essential Skills*?

The term *essential skills* has been used because it describes accurately the two key elements of *essential*, in that all individuals should be developing the skills, and *skill*, as distinct from knowledge or understanding.

Essential skills is the term used by the Ministry of Education in the *New Zealand Curriculum Framework*. The *Curriculum Framework* applies to all New Zealand state schools. There are many other terms that have been used in the relevant literature to describe the same concept, including:

Key Competencies;	Core Competencies;
Core Skills;	Transferable Skills;
Transition Skills;	Enabling Skills;
Basic Skills;	Foundation Skills.

The *essential skills* listed in the *New Zealand Curriculum Framework* (1993) are:

Communication Skills;	Numeracy Skills;
Information Skills;	Problem-Solving Skills;
Self-Management and Competitive Skills;	Social and Cooperative Skills;
Physical Skills;	Work and Study Skills.

What are *generic skills*?

Generic skills are skills that traverse a range of situations or occupations. While the skills may be necessary for many occupations, they are not necessarily regarded as essential for all New Zealanders.

The development of unit standards for the *Qualifications Framework*, over a number of industries, has shown that there are a large number of skills generic to the workplace. Some of these are component skills within the set of *essential skills*. Others would not normally be developed in schools. For example, skills in quality management, safety in the workplace, and negotiation are generic, but not normally part of a school programme. They may be included in a post-school education or training programme. The set of *generic skills* will grow as more industries join the *Qualifications Framework*.

Essential skills are skills that should be part of *every* learner's experience.

Schools, tertiary providers and employers will ensure that their learners are developing these skills and they will incorporate the skills within learning programmes.

Essential skills enhance an individual's ability to function effectively as a full member of New Zealand's society and economy.

They enable individuals to adjust more readily to future social and economic changes.

Not all the skills relate to work.

The *essential skills* will be progressively acquired by most learners while they are still at school and in initial training for the workforce.

They will, however, be developed to higher levels over time and remain important through the rest of life.

Generic skills are skills that are common to many occupations.

Tertiary providers and employers will incorporate them within specific learning programmes.

Generic skills will be attained by many learners while they are studying at tertiary level or through active learning on-the-job.

They will be applied in new contexts and new jobs as change occurs.

Essential and *generic skills* are more likely to be transferable.

Communicating in a classroom presentation, for example, may be transferred to communicating effectively in the workplace.

Essential and *generic skills* can be acquired in different contexts.

Communications skills can be developed in a sports team, in a formal debate, in a class or group exercise, as part of a school field trip, on the marae, or through participating in a discussion group on improving product quality.

Safety in the workplace can be incorporated in a range of occupations and industries, and in a school laboratory or workshop.

The reasons for debate

There are three major reasons for wider understanding and discussion of the concept of *essential* and *generic skills*. Curriculum and assessment requirements resulting from the *New Zealand Curriculum Framework* are the first. The second is the need to identify *essential* and *generic skills* arising from the development of unit standards and qualifications spanning a range of occupations. The third is that similar developments in the assessment and recognition of skills are occurring overseas.

Curriculum and assessment change

In New Zealand it has been acknowledged for some time that *essential skills* should be given more emphasis. For example, the 1986 report of the Committee of Inquiry into Curriculum, Assessment, and Qualifications in Forms 5 to 7 stated:

In addition to the knowledge assumed in each of these areas, a range of skills that enable students to acquire and apply their knowledge forms an integral part of the proposal of the Committee ... These include such skills as those associated with problem solving, reasoning, study, research, organisation, and evaluation, and creative and expressive skills, interpersonal skills, and practical skills. (Learning and Achieving, 1986 p48)

The later reports, *Tomorrow's Standards* (1990) and *Tomorrow's Skills* (1990) reinforce the notion of ***essential skills***.

Skills for the New Economy

Ability to continue learning/adapting throughout life
Communication/interpersonal skills
Information skills
Business/managerial skills
Technology/computer skills
Language skills
Thinking/creative/problem solving
Number skills
.... Different groups argue for dramatic improvement in the levels of specialist skills, such as science and maths expertise in emerging high technology industries, but for New Zealand as a whole to be successful in the new economy, everyone needs to lift their level of base generic skills. (Tomorrow's Skills, NZ Planning Council, 1990, p15)

Record of Achievement

New Zealand schools and employers have for some time been interested in the wider issue of reporting student achievement. A number of schools are now producing more comprehensive leaver documents known as *Records of Achievement*. The *Record* contains a section on the important skills achieved by students. The Ministry of Education conducted a pilot on School Leaver Documentation with nine secondary schools, extended in 1992 to a further 38 schools. The New Zealand Employers' Federation has been a strong supporter of the *Record of Achievement* project and has published a booklet entitled *Leaving and Achieving* to promote the *Record of Achievement* amongst its members.
The skills check-list for the *Record of Achievement* appears in Appendix I.

The Record of Achievement would include:

- *a list of secondary schools attended (with dates) and courses taken (listed by year and form level);*
- *reports of the level of skills attained in certain important skills that cross subject boundaries and are likely to be of particular interest to parents as well as prospective employers. These might include such things as reading skills, spoken communication skills, written communication skills, skills in listening and following instructions, numeracy skills, skills in understanding graphic and tabular information, independent study skills, evidence of cooperation and team work, physical*

performance skills, and problem-solving skills;

- *information on school awards and responsibilities, achievements outside the classroom, and comments on personal skills and qualities. (Tomorrow's Standards, 1990, p48)*

A New Curriculum for Schools

The Ministry of Education published its consultative document on the National Curriculum of New Zealand in 1991. This proposed a curriculum model with a set of fundamental principles, seven essential learning areas, assessment methods, and seven *essential skills*, embodied in clear learning outcomes known as *National Curriculum Objectives*. As a result of consultation the ***essential skills*** were modified and expanded. The ***essential skills*** as finalised in the *New Zealand Curriculum Framework* are:

Communication Skills;	Numeracy Skills;
Information Skills;	Problem-Solving Skills;
Self-Management and Competitive Skills;	Social and Cooperative Skills;
Physical Skills;	Work and Study Skills.

The full list of descriptors for the ***essential skills*** appears in Appendix 2. The *New Zealand Curriculum Framework* document gives additional information.

The ***essential skills*** identified in the *New Zealand Curriculum Framework* are very similar to other lists developed overseas and by bodies such as the NZ Planning Council, the New Zealand Employers' Federation and by teachers for the *New Zealand Record of Achievement* project.

The *National Qualifications Framework*

The *National Qualifications Framework* is currently being implemented by the New Zealand Qualifications Authority. It has the potential to incorporate various aspects of the assessment and reporting of ***essential skills*** and ***generic skills***.

As part of its implementation of the *Qualifications Framework*, the Qualifications Authority has been facilitating the development of several thousand unit standards in a wide range of learning domains. Many domains overlap to some extent: that is, skills employed in one industry sector occur in a range of other sectors. Unit standards development has identified ***generic skills*** areas that are required for a range of qualifications.

One of the principles of the *Qualifications Framework* is to minimise overlapping of unit standards and qualifications. This requires some standards to be portable across different occupations and industries. The identification of generic unit standards has been necessary to achieve a coherent *Framework*.

There remains a fundamental tension in describing standards without reference to a specific industry context and placement. The problems associated with ***generic skills*** units are similar, therefore, to those associated with ***essential skills***.

A number of standards have been developed and registered on the *National Qualifications Framework* as *core generic*. These, while having national standing, will need to be

reviewed against final policy decisions on ***essential*** and ***generic skills***. In the interim the *core generic* standards are available for delivery by a range of industries and providers. They can also be incorporated in qualifications.

Overseas developments

There are many countries pursuing the concept of ***essential skills***. Some, like Australia and the United States, are developing frameworks, assessment and reporting structures that are independent of qualifications and curriculum structures already in place. Others, and in particular the United Kingdom, are developing skills assessment and reporting systems that are integrated with qualifications structures. None of the systems has matured, and many are still in the conceptual stage.

Much of the impetus for recognising ***essential skills*** has resulted from a feeling that, in the past, schools and tertiary providers have not emphasised or reported on the skills necessary for their students to be successful in the modern workplace. Employers, likewise, have not clearly communicated their requirements for a changing workplace.

Australia

The *Finn Report* (1991) in Australia introduced the concept of *key competencies*. These are *"certain essential things that all young people need to learn in their preparation for employment"*.

The Mayer Committee, formed as a response to the Finn Report, clarified the concept of employment-related *key competencies* in post-compulsory education and training. It has produced a number of discussion papers and a final report. The proposed *key competencies* are:

Collecting, analysing and organising ideas and information
Expressing ideas and information
Planning and organising activities
Working with others and in teams
Using mathematical ideas and techniques
Solving problems
Using technology

Only the last (using technology) has no equivalent in the *New Zealand Curriculum Framework* list of ***essential skills***. It is, however, an essential learning area in the *Curriculum Framework*.

Each of the competencies is described at three levels of performance. These are not identical to the levels in the *Australian Standards Framework*, which is administered by the National Training Board and will form the reference point for vocational education and training. The *key competencies* will be incorporated into the *Australian Standards Framework*. Australia is also looking at the development of a consistent qualifications framework spanning general and vocational education.

Proposals for assessment and reporting of the *key competencies* will ensure that:

- assessment will follow nationally agreed principles: no national moderation or monitoring system has been proposed;
- recording of performance will be based on a common format;
- reporting will occur at any time that it is requested by a student in Year 11/12 or entry-level vocational programmes;
- agencies will update records where young people have left formal education and training programmes.

Scotland

In Scotland the *core skills* have been identified as:

Communication
Personal and interpersonal
Problem solving
Numeracy
Information technology

The *core skills* are defined as *"those abilities that are fundamental in a wide range of life roles and particularly in employment"*. The term does not refer only to basic skills, but also to *"high level skills used in higher education and demanding and complex occupational roles"*. One of the central aims has been to produce a framework that will systematically incorporate these *core skills* in the post-compulsory curriculum. The project has developed attainment targets at three levels within the Scottish Vocational Qualifications (SVQs), administered by the Scottish Vocational Education Council (SCOTVEC), for each of five *core skills*. Their placement within curriculum delivery is being debated. Some advocates favour a separate delivery system, whereas others would prefer an integration of these skills with traditional learning domains.

England and Wales

In England and Wales the *core skills* are defined as:

Communication
Problem solving
Personal skills
Numeracy
Information technology
Modern language competence

These are being incorporated in the new post-16 qualification of the General National Vocational Qualification (GNVQ). It is intended to find ways of building *core skills* into such academic qualifications as A levels.

NCVQ have developed units at levels 1 to 4 in several of the *core skills* areas. These are essentially generic and free of context. The UK faces major problems in implementing

core skills in the secondary education sector, which retains a heavy focus on external examinations. It has not been decided how to include the *core skills* in A levels.

United States

The *America 2000* project has stimulated debate over the role of schooling. Attempts in the 1980s to improve school performance are deemed to have been largely unsuccessful. The result has been renewed involvement of outside groups and business in driving school reform. The Secretary's Commission on Achieving Necessary Skills (SCANS), set up by the US Department of Labor, has developed a framework of skills.

The Commission has listed five *Competencies* and a three-part *Foundation* that together will provide *workplace know-how*.

The five *competencies* are:

Resources:	Identifies, organises, plans and allocates resources
Interpersonal:	Works with others
Information:	Acquires and uses information
Systems:	Understands complex inter-relationships
Technology:	Works with a variety of technologies

The three-part *foundation* skills are:

Basic skills:	reads, writes, performs arithmetic and mathematical operations, listens and speaks
Thinking skills:	thinks creatively, makes decisions, solves problems, visualises, knows how to learn and reasons
Personal qualities:	displays responsibility, self-esteem, sociability, self-management, integrity and honesty

These lists are well organised although they may not be exhaustive or sufficient, given that the role of schooling is not solely to prepare students for work. They do indicate a major shift in American thinking. A difficulty yet to be faced is implementing a national system of skills reporting in a country where education systems are locally organised.

Issues

The Qualifications Authority will need to address a number of issues before decisions on *essential* and *generic skills* within the *Qualifications Framework* are made. Public response to these issues will be an important contributor to the final policy decisions.

Is there a place for separate *essential skills* units in the *National Qualifications Framework*?

Some *essential skills* are already being developed in the form of units. For example, there are units being developed in communications, numeracy and problem-solving skills for inclusion in the *National Qualifications Framework*. This is because they are required already by some national standards bodies. The issue is to what extent all *essential skills* areas should be developed as separate units.

Regrettably, it is often the case that only those skills that are assessed are taught in formal education. Unless the *essential skills* are built into the *National Qualifications Framework* in some form or other, there is a risk that the skills will not be assessed or reported on.

Some would argue that if *essential skills* are important and need to be reported on, then they must be developed into units. Others would argue the impossibility of assessing skills without a context and that they should be integrated into subject-related units.

Should *essential* and *generic skills* be recognised in the *National Qualifications Framework* at all levels?

The *Qualifications Framework* has eight levels of progression. It is doubtful whether all *essential skills* will have distinctly different and identifiable elements (learning outcomes) at all eight levels. Some skills will stretch further up the levels than others. Australia has decided to develop descriptions of skills for the lowest three levels, whereas the United Kingdom has identified four levels of skill.

Pragmatism suggests that all *essential skills* would be visible at level 1, and some would extend through the *Framework*. *Essential skills* would not necessarily be recognised at all levels within the *Qualifications Framework*, but the process could begin at, say, levels 1 to 3.

How can *essential* and *generic skills* be developed in meaningful contexts?

Some of the *essential skills* and *generic skills* can be developed in stand-alone contexts. For example driving skills can be developed in a separate programme, and these skills will readily transfer to different vehicles and different environments. Communications skills, at the lower levels of the *National Qualifications Framework*, can be developed as a separate programme to be employed in a range of contexts. Contexts can be simulated to provide opportunities to perform the skills and practise theory.

With other skills, for example, problem solving at National Diploma level, it is unlikely that teaching and learning could be undertaken without familiar contexts that present considerable cognitive challenges. In this case isolating an *essential skill* would be counter-productive. The development of problem-solving skills would have to be closely integrated with other unit standards in a particular learning domain.

How can the transfer of skills to new situations be encouraged?

A key issue in implementing *essential skills* and *generic skills* is the degree to which skills

transfer from one situation to another. Research in this area is limited, particularly with regard to higher level skill transfer. Some research suggests that any skill transfer is limited, and unlikely to occur without teaching the application of the skill in multiple contexts and situations over an extended period of time. However, assumptions are made about the transfer of, for example, communications skills to other contexts in our everyday life. Important factors in inferring transferability will be the range of contexts in which the skill has been developed and applied and the frequency of application of the skill. Similarly, a knowledge of the situation in which the skills are applied influences the effectiveness of the transfer. Other indicators may be attitude and motivation.

Without a great deal more research, it will be difficult to know the best delivery approach to take in maximising skill transfer. Inferences about the effectiveness of transfer will be best supported by evidence showing the range of contexts in which skills have been performed. It is worthwhile encouraging the development of *essential skills* and *generic skills* in more than one context in order to heighten the likelihood of transfer to new situations.

How should skills achievements be reported?

If the *essential skills* are not separately reported it is unlikely that they will have widespread recognition. A common reporting language is a key concern of employers and of some further education providers. A skills checklist would be one means of achieving a common skills language. There may, however, be value in having a standard reporting format.

The *Record of Learning*, which records unit credit within the *National Qualifications Framework*, could form part of the wider reporting on student achievements in the *essential skills*. Reporting of achievement in the *essential skills* could however be left to education and training providers. This would not preclude the development of a common reporting framework. Unless carefully coordinated, this approach could lead to inconsistency in reporting the skills.

If separate units in the *essential skills* are developed, consistent reporting on the *Record of Learning* is straightforward. Integration of the skills into subject-based units and the lack of separate national reporting of *essential skills* may not provide the information employers and others are seeking.

It is anticipated that *generic skills* units will continue to be developed and registered on the *National Qualifications Framework*.

The issues present a fundamental paradox. In developing *essential skills* and *generic skills* it is necessary to embed the skills within specific contexts, but in order to enhance the likelihood of transfer of the skills to new situations they need to be separately identified and reported.

The role of standards setting bodies and of providers of education and training will be crucial to the development of the *essential* and *generic skills* in learners. The issues involved in achieving transferability of skills and in satisfactorily reporting skill development will challenge both. The successful inclusion of a skills emphasis within a wide range of programmes will require the initiative, imagination and professionalism of trainers and teaching staff.

Models

There are many different ways that ***essential skills*** could be recognised within the *National Qualifications Framework*. The following four models represent the main options:

Model 1: The Separation Model

Separate assessment and reporting of the ***essential skills*** would be undertaken by providers of education and training. There would be no direct linkage to the *National Qualifications Framework*. Although assessment and reporting principles could be promulgated at the national level, no assessment, moderation or reporting of assessments would be undertaken by the New Zealand Qualifications Authority.

The reporting of ***essential skills*** could be incorporated within the optional *Record of Achievement* being piloted by the Ministry of Education. Use of the *Record of Achievement* would be extended beyond school.

Some ***generic skills*** units would be registered on the *Framework*, where these are not restricted by context. Remaining ***generic skills*** would be built into a range of unit standards.

Advantage:	Flexibility for providers to assess and report on ***essential skills*** to meet local requirements.
Disadvantages:	A lack of national consistency in assessment and reporting of achievements in the ***essential skills***. There is also a risk that the skills will not be given appropriate recognition in learning programmes.

Model 2: The Adjunct Model

The ***essential skills*** and a range of ***generic skills*** would be developed into units at appropriate levels of the *Framework*. Reporting would be straightforward as units and credit gained would be listed on the *Record of Learning*.

Units in this model would be contextually free. They would not specify content or in what context the skills are acquired. Standards would be somewhat generalised. Delivery of the units could be implemented in a number of ways, but generally they would appear as an adjunct to other units drawn from particular learning domains. They could however be delivered independently.

Advantage:	A straightforward means of ensuring national consistency in assessing and reporting the ***essential skills*** and a range of ***generic skills***.
Disadvantages:	Difficulty in setting context free standards. A risk that ***essential skills*** and ***generic skills*** units will be divorced

from real and stimulating contexts. The success of the model hinges on providers developing well-integrated programmes.

See Appendix 3 for an example from the English General National Vocational Qualification.

Model 3: The Integrated Model

In this model elements (learning outcomes) would be identified across a wide range of skills areas. This would include all of the ***essential skills*** and a large range of ***generic skills*** areas. For example, in the ***essential skill*** of communications the various skills of listening, reading and writing, presenting information graphically, etc would be identified and written in the form of elements. The elements would then be assigned to a level within the *National Qualifications Framework*. Elements would not be arranged into units, except perhaps in some entry level units where skills are based on knowledge of processes. Instead, they would be placed in a bank that could be drawn on by unit writers.

Developers of units in every *Framework* domain would have access to the standardised elements, and could select elements relevant to units in their own learning domains. This integrated approach would ensure that skills were developed within a relevant context.

Reporting could be undertaken by schools and other education and training providers in the optional *Record of Achievement*. Alternatively, a computer system could be devised which would use the database of unit standards to link elements in ***essential skills*** and ***generic skills*** with an individual learner's achievements. The computer would generate a profile of the ***skills*** in a supplementary report on ***essential*** and ***generic skills***. This would add some additional cost to the system.

Significantly, both reporting alternatives suffer from a lack of transparency for both learners and industry.

Advantages:	A standardised language of skills, which at the same time allows explicit contexts to be associated with each skill. Standardised ***essential skills*** and a wide range of ***generic skills*** can be identified and incorporated within particular unit standards.
Disadvantage:	No mechanism for simple and transparent reporting of ***essential*** and ***generic skills***.

Model 4: Combination model

In this model, features of the adjunct and integrated models are combined. Contexts would be associated with each unit standard and a straightforward method of reporting would be employed.

Instead of large units being developed in each of the ***essential skills*** and ***generic skills***, the skills would be broken down into smaller units (typically comprising 1 or 2 elements). Several units might be required to cover all the components within a single ***essential skill*** or ***generic skill*** area.

Essential skills units could then be linked to units in learning domains to provide a context. The learning domain units would specify the *essential* or *generic skills* unit as a co-requisite. The units could also specify a range statement for each element of the *essential skill* or *generic skill* unit to ensure that identifiable standards could be applied.

One complication is that credit may be gained for the same *essential skill* or *generic skill* unit in several different contexts. There are at least two possible ways to address this. *Essential* and *generic skills* units could have no credit, and the credit value would be added to the learning domain unit standard. Alternatively, qualifications could specify a required amount of credit in *essential* and *generic skills* unit standards.

Advantage:	Straightforward assessment and reporting for the *Record of Learning*, while also allowing a context to be associated with each skill.
Disadvantage:	Some complication is added to the *National Qualifications Framework*.

Implementing an *essential skills* and *generic skills* policy

The scope of these proposals, in formally recognising *essential* and *generic skills*, has considerable implications for the qualifications system and for teaching and learning.

An increase in emphasis on broad transferable skills, in addition to knowledge and skills within more specific domains, will require new strategies for delivery systems. The *New Zealand Curriculum Framework* already demands these changes in schools, but any formalisation of *essential skills* within the *National Qualifications Framework* will impact on other providers in the tertiary sector and industry training. New approaches to teaching and learning can be achieved only by experimenting with new approaches incorporating a commitment to staff training. It will take some time for a skills emphasis to co-exist with traditional subject or occupational approaches to learning.

Whichever model is preferred, there will be always be a tension between ensuring that skills are developed in meaningful contexts, and being able to report on the transfer of *essential* and *generic skills*.

Some of the approaches outlined in the models would impact on unit development, recording and reporting systems in the *National Qualifications Framework*. Changes to current systems would probably have to occur gradually. All unit standards have expiry dates assigned at the time of registration. As unit standards come up for review they could be examined for consistency with the *essential* and *generic skills* policy. To implement the adjunct or combination model a bank of *essential* and *generic skills* unit standards would have to be developed. This would take some time, and unit standards would already have

been developed for most industries and learning domains. Long-term review of unit standards would be inevitable.

If reporting of ***essential skills*** and ***generic skills*** is to be built into the *Record of Learning*, modifications to the reporting system are necessary. Further development of the certification system for the *Qualifications Framework* would be required. On the other hand, *Records of Achievement* could become the central vehicle for reporting ***essential skills***. The promotion and further development of the *Record of Achievement*, particularly in the tertiary sector, would be necessary for this approach to succeed.

References

Core Skills by Design: A Draft Core Skills Framework, The Scottish Office Education Department, February 1991

Core Skills Unit Specifications, National Council for Vocational Qualifications, London. 1991

Jessup G, *Common Learning Outcomes: Core Skills in AIAS Levels and NVQs*. NCVQ R&D Report No 6, National Council for Vocational Qualifications, London, April 1990

Learning and Achieving. Second Report of the Committee of Inquiry into Curriculum, Assessment, and Qualifications in Forms 5 to 7, Department of Education, Wellington. June 1986

Leaving and Achieving. A booklet for employers on school leaver documentation, New Zealand Employers Federation, Wellington, 1989

Mayer Committee, *Employment-Related Key Competencies: A Proposal for Consultation*, Melbourne, May 1992

Mayer Committee, *Putting General Education to Work: The Key Competencies Report*, Melbourne, 1993

Oates T, *Developing and Piloting the NCVQ Core Skills Units: An outline of method and a summary of initial findings*, National Council for Vocational Qualifications, London, November 1991

Perry J and Barnett C, *Skills in Schools*, Final Report of the former Schools Council Skills for Adult Working Life Project, Schools Curriculum Development Committee, London. 1985

Tomorrow's Skills, New Zealand Planning Council, Wellington, April 1990

The National Curriculum of New Zealand: A Discussion Document, Ministry of Education, Wellington, 1991

The New Zealand Curriculum Framework, Ministry of Education, Wellington, 1993

Tomorrow's Standards: The Report of the Ministerial Working Party on Assessment for Better Learning, Ministry of Education, Wellington, 1990

What Work Requires of Schools: A SCANS Report for America 2000, The Secretary's Commission on Achieving Necessary Skills, US Department of Labor, June 1991

Wolf A, *Assessing Core Skills: wisdom or wild goose chase?* Cambridge Journal of Education, Vol. 21, No. 2, 1991

Appendix 1

Record of Achievement - skills list

NOTE: Within each skills section, tick the box or boxes that describe(s) this student's achievements. Please attempt to fill in each section.

Section A: Work Skills (P = Practical Work, W= Written Work)

Output

P W

- Frequently exceeds requirements for work set
- Completes work set
- Completes most work set
- Completes some work set

Presentation

P W

- Presentation often creative and imaginative
- Presentation careful, accurate
- Presentation meets requirements
- Presentation sometimes meets requirements

Self-Organisation

P W

- Is well organised and meets targets
- Generally well organised, meets most targets
- Developing organisational skills
- Manages best when closely supervised

Co-operation

P W

- Shows sensitivity to others
- Actively involved in organising activities
- Participates willingly in activities
- Sometimes contributes to activities

Other Comments on WORK SKILLS

Section B: Communication Skills

Fluency in languages other than English (State)

Speaking

- Speaks confidently before a large audience
- Articulates a viewpoint to a group
- Contributes ideas to a discussion
- Is confident in conversing with others
- Able to articulate an opinion

Listening

- Listens carefully and extracts details from spoken material
- Comprehends complex oral instructions
- Comprehends straightforward oral instructions
- Seeks clarification when uncertain

Writing

- Is able to write a [illegible] letter, report, account, summary, explanation
- Is able to write a letter, report, account, summary, explanation with guidance
- Edits and proof reads accurately
- Argues a point of view effectively
- Writes imaginatively with originality

Reading

- Understands subtle and sophisticated written material
- Understands most written material
- Understands material written in straightforward style
- Has limited reading skills
- Discriminates between fact and opinion

Visual Media

- Uses visual media imaginatively and/or with originality to convey a message
- Uses visual media effectively to convey a message
- Attempts to use visual media to convey a message
- Understands and interprets visual media
- Understands simple material

Other Comments on COMMUNICATION SKILLS

Section C: Information Handling Skills

Gathering Information

Locates and selects relevant information/data from a variety of sources
Locates and selects relevant information/data
Sometimes locates and selects relevant information/data

Processing Information

Organises and processes complex information/data appropriately and accurately
Organises and processes simple information/data
With guidance is able to process information/data

Analysing Information

Analyses a variety of complex information/data and draws valid conclusions
Analyses a variety of straightforward information/data and draws valid conclusions
Attempts to analyse information/data

Other Comments on INFORMATION HANDLING SKILLS

Section D: Solving Problems

Demonstrates originality and/or inventiveness in solving problems
Solves problems by applying appropriate techniques
Sometimes solves problems by applying appropriate techniques
Attempts to apply techniques towards solving problems

Other Comments

Section E: Numeracy

Performs calculations with accuracy
Performs calculations with reasonable accuracy
Performs calculations with guidance
Makes reasonable estimates and approximations
Knows when results and measurements are reasonable

Other Comments

Section F: Physical Performance Skills

Co-ordination

Demonstrates superior co-ordination
Demonstrates good co-ordination
Demonstrates limited co-ordination

Performs at

a high level		distinction
an intermediate level	**with**	good technique
an elementary level		developing technique

in .....(state activity)

Using Equipment

Has developed a high level of skill in using..... .....(state equipment)

Has developed elementary skill in using..... (state equipment)

Has developed familiarity in using..... (state equipment)

Other Comments on PHYSICAL/PERFORMANCE SKILLS

Personal Qualities

Tick the appropriate box for the observed behaviour.

	Consistently	Usually	Sometimes	Seldom
Is reliable				
Is motivated				
Shows initiative				
Is courteous				
Relates easily to others				
Takes responsibility				
Is punctual				
Is cooperative				
Perseveres				
Considers the views and feelings of others				

General Comments

Comments on qualities not already covered e.g. mana, dignity, self esteem, leadership, resourcefulness, readiness to communicate, confidence, awareness of other cultures, maturity, honesty, independence, vitality, enthusiasm, cheerfulness, sense of humour, care for others.

Appendix 2

Ministry of Education *essential skills* (*Nga Tino Pukenga*)

The New Zealand Curriculum specifies eight groupings of essential skills to be developed by all students across the whole curriculum throughout the years of schooling. These categories encompass other important groups of skills, such as creative skills, valuing skills, and practical life skills.

The eight groupings of essential skills are:

- Communication skills
- Numeracy skills
- Information skills
- Problem-solving skills
- Self-management and competitive skills
- Social and cooperative skills
- Physical skills
- Work and study skills

All the essential skills are important if students are to achieve their potential and to participate fully in society, including the world of work. In planning learning programmes, schools need to ensure that all students have the opportunity to develop the full range of the essential skills to the best of their ability.

The categories are simply convenient labels for grouping the essential skills and attributes which all students need to develop. These skills cannot be developed in isolation. They will be developed through the essential learning areas and in different contexts across the curriculum. By relating the development of skills to the contexts in which they are used, both in the classroom and in the wider world, school programmes will provide learning which students can see to be relevant, meaningful, and useful to them.

A number of the essential skills may be developed through group activities. Furthermore, many of the skills will enable individuals to operate more effectively in group situations. Students will learn to work in cooperative ways, and to participate confidently in a competitive environment.

The curriculum will challenge all students to succeed to the best of their ability. Individual students will develop the essential skills to different degrees and at different rates.

Communication Skills

Students will:

- communicate competently and confidently by listening, speaking, reading, and writing, and by using other forms of communication where appropriate;

- convey and receive information, instructions, ideas and feelings appropriately and effectively in a range of different cultural, language, and social contexts;
- develop skills of discrimination and critical analysis in relation to the media, and to aural and visual messages from other sources;
- argue a case clearly, logically and convincingly;
- become competent in using new information and communication technologies, including augmented communication for people with disabilities.

Numeracy Skills

Students will:

- calculate accurately;
- estimate proficiently and with confidence;
- use calculators and a range of measuring instruments confidently and competently;
- recognise, understand, analyse, and respond to information which is presented in mathematical ways, for example, in graphs, tables, charts, or percentages;
- organise information to support logic and reasoning;
- recognise and use numerical patterns and relationships.

Information Skills

Students will:

- identify, locate, gather, store, retrieve, and process information from a range of sources;
- organise, analyse, synthesize, evaluate, and use information;
- present information clearly, logically, concisely, and accurately;
- identify, describe, and interpret different points of view, and distinguish fact from opinion;
- use a range of information-retrieval and information-processing technologies confidently and competently.

Problem-solving Skills

Students will:

- think critically, creatively, reflectively and logically;
- exercise imagination, initiative, and flexibility;
- identify, describe, and redefine a problem;
- analyse problems from a variety of different perspectives;
- make connections and establish relationships;
- inquire and research, and explore, generate and develop ideas;
- try out innovative and original ideas;
- design and make;

- test ideas and solutions, and make decisions on the basis of experience and supporting evidence;
- evaluate processes and solutions.

Self-management and Competitive Skills

Students will:

- set, evaluate, and achieve realistic personal goals;
- manage time effectively;
- show initiative, commitment, perseverance, courage, and enterprise;
- adapt to new ideas, technologies, and situations;
- develop constructive approaches to challenge and change, stress and conflict, competition, and success and failure;
- develop the skills of self-appraisal and self-advocacy;
- achieve self-discipline and take responsibility for their own actions and decisions;
- develop self-esteem and personal integrity;
- take increasing responsibility for their own health and safety, including the development of skills for protecting the body from harm and abuse;
- develop a range of practical life skills, such as parenting, budgeting, consumer, transport, and household maintenance skills.

Social and Co-operative Skills

Students will:

- develop good relationships with others, and work in co-operative ways to achieve common goals;
- take responsibility as a member of a group for jointly-decided actions and decisions;
- participate appropriately in a range of social and cultural settings;
- learn to recognise, analyse, and respond appropriately to discriminatory practices and behaviours;
- acknowledge individual differences and demonstrate respect for the rights of all people;
- demonstrate consideration for others through qualities such as integrity, reliability, trustworthiness, caring or compassion (aroha), fairness, diligence, tolerance (rangimarie), and hospitality or generosity (manaakitanga);
- develop a sense of responsibility for the well-being of others and for the environment;
- participate effectively as responsible citizens in a democratic society;
- develop the ability to negotiate and reach consensus.

Physical Skills

Students will:

- develop personal fitness and health through regular exercise, good hygiene, and healthy diet;
- develop locomotor, non-locomotor, and manipulative skills;
- develop basic first aid skills;
- develop specialised skills related to sporting, recreational, and cultural activities;
- learn to use tools and materials efficiently and safely;
- develop relaxation skills.

Work and Study Skills

Students will:

- work effectively, both independently and in groups;
- build on their own learning experiences, cultural backgrounds and preferred learning styles;
- develop sound work habits;
- take increasing responsibility for their own learning and work;
- develop the desire and skills to continue learning throughout life;
- make career choices on the basis of realistic information and self-appraisal.

Appendix 3

General National Vocational Qualifications: Unit in problem solving, level 3

3.1 Clarify the nature of a problem

a the methods and resources used will lead to efficient and full clarification of problems
b the information needed and appropriate sources from which it can be obtained are accurately identified
c all available evidence is taken into account
d clarification is sufficiently detailed to allow decisions to be taken on approaches to solving the problem
e clarification clearly distinguishes between relevant and irrelevant and important and unimportant aspects of the problem

Range

Complexity of problems to be tackled: problems not obvious from the signs and symptoms; problems concerning routine operational matters; problems concerning non-routine operational matters

Clarification methods: will be specific to the occupational context (eg in engineering - running a fault diagnosis programme; in care - consulting with people in a situation etc); selected from a range given by others; determined by the individual

---

3.2 Decide how to find a solution to a problem

a signs and symptoms of the problem are identified accurately and response made within an appropriate timescale
b alternative possibilities are adequately explored before being rejected
c the activities decided on are appropriate to the nature of the problem and will allow a solution to be found
d the activities decided on make good use of available resources

Range

Complexity of problems to be tackled: problems obvious from the signs and symptoms; problems not obvious from the signs and symptoms; problems affected by a limited number of factors only; problems affected by a broad range of factors; problems concerning routine operational matters; problems concerning non-routine operational matters

Choice of activities: selected by the individual (eg asking/informing a supervisor, following a given procedure, consulting a manual, reflecting using previous knowledge, consulting with experts); selected from a rang ven by others

3.3 Judge the appropriateness of potential solutions to a problem

a the strengths and weaknesses of each solution are accurately identified
b the advantages and limitations of different solutions are accurately compared
c criteria provided for judging solutions are applied in full
d the evidence needed and appropriate sources from which it can be obtained are accurately identified
e all available evidence is taken into account
f conclusions drawn are appropriate and can be justified

Range

Complexity of problems to be tackled: problems obvious from the signs and symptoms; problems not obvious from the signs and symptoms; problems affected by a limited number of factors; problems affected by a broad range of factors; problems concerning routine operational matters; problems concerning non-routine operational matters
Solutions: Criteria for judging solutions are given to the individual; there is more than one acceptable solution to the problem; the evidence for judging solutions is readily available; the evidence for judging solutions has to be sought out by the individual

3.4 Evaluate the implementation of a solution to a problem

a criteria provided for evaluation are applied in full
b evaluation is carried out at appropriate times according to the nature of the problem and the solution being implemented
c strengths and weaknesses of the solution are clearly identified
d the evidence needed and appropriate sources from which it can be obtained are accurately identified
e all available evidence is taken into account
f conclusions drawn are appropriate and can be justified
g recommendations from evaluations are implemented without undue delay

Range

Complexity of problems to be tackled: problems obvious from the signs and symptoms; problems not obvious from the signs and symptoms; problems affected by a limited number of factors; problems affected by a broad range of factors; problems concerning routine operational matters; problems concerning non-routine operational matters
Evaluations: criteria for evaluation given to the individual; solutions implemented by the individual or by others; evidence for evaluating different solutions is readily available; evidence for evaluating different solutions has to be sought out by the individual

Appendix 4 - Glossary

ACCREDITATION (of national standards bodies) - a process for ensuring that national standards bodies have the capability, including quality management systems, to register assessors (see also GENERAL ACCREDITATION, GROUP ACCREDITATION and UNIT ACCREDITATION).

ACCREDITATION (of providers) - a process for ensuring that providers have the capability, including management of quality, to deliver and assess unit standards.

ADVISORY GROUP - a group of advisers appointed by the Qualifications Authority to act in place of a national standards body, where no such body exists in an area of learning.

ASSESSMENT - a process of collecting and interpreting evidence of competence or achievement.

ASSESSOR - see REGISTERED ASSESSOR

AUDIT - see QUALITY AUDIT

CERTIFICATE - documentary evidence that a qualification has been awarded.

COMPETENCE - the application of knowledge, skills and attitudes to the standard required.

CREDIT - a value assigned to a unit standard that reflects the relative time and effort required to achieve its ourcomes.

CREDIT TRANSFER - a process of transferring credits between programmes that lead to a nationally registered qualification.

DELIVERY - teaching and learning approaches, context and content, resources, and assessment tasks.

DOMAIN - a term describing a specific area of learning at unit standard level, defined in the *Index of Unit Standards and National Qualifications.*

ELEMENT - the learning that must be demonstrated for successful completion of a unit standard.

ESSENTIAL SKILLS - those identified by the Ministry of Education in the *New Zealand Curriculum Framework* as fundamental for learners in achieving their full potential and participation in society.

FIELD - a term describing a broad area of learning, corresponding to an *ISCED* field and defined in the *Index of Unit Standards and National Qualifications* (see also SUB-FIELD and DOMAIN).

GENERAL ACCREDITATION - accreditation of a provider to offer programmes based on all

National Certificate and National Diploma unit standards up to level 7 of the Framework.

GENERIC SKILLS - those common, and generally fundamental to, a range of learning domains.

GROUP ACCREDITATION - accreditation of a provider to offer programmes based on a number of unit standards in a specified field, sub-field or domain up to a specified level.

INDEX OF UNIT STANDARDS AND NATIONAL QUALIFICATIONS - a database that defines fields, sub-fields and domains, used for naming qualifications and unit standards, and in associating unit standards for provider accreditation.

INDUSTRY TRAINING ORGANISATION - a body recognised by the Education and Training Support Agency as the national standards body and training co-ordinator for its industry sector.

LEVELS - the eight levels of the National Qualifications Framework.

MODERATION OF ASSESSMENT - a process for ensuring the consistency of assessment with the required standard.

NATIONAL QUALIFICATIONS FRAMEWORK - collectively, all nationally registered qualifications and the nationally registered unit standards from which they are derived. Implicit is a defined and logical relationship between them.

NATIONAL STANDARDS BODIES - represent all major user groups connected with a field, subfield or domain (for example, health sciences) and have responsibility for the development, evaluation, endorsement and maintenance of all unit standards and qualifications in that category. Used as a generic term for National Standards Bodies, Industry Training Organisations, whakaruruhau and Qualifications Authority advisory groups.

PERFORMANCE CRITERIA - statements of the standard against which the attainment of elements or outcomes is assessed.

PROVIDER - an individual or organisation providing education or training.

QUALIFICATION - a named combination of unit standards that has been endorsed by a national standards body and registered by the Qualifications Authority.

QUALITY AUDIT - a process for ensuring the effectiveness of a provider's or national standards body's overall systems for the management of quality; a function of the Authority.

QUALITY MANAGEMENT - a structure and process of improvement through self-evaluation, implemented by a provider or national standards body to ensure that standards required by the Authority are met and maintained; a prerequisite for accreditation.

RECOGNITION OF PRIOR LEARNING - a process of awarding credits for unit standards in the National Qualifications Framework where the learning outcomes have been acquired outside the Framework.

RECORD OF ACHIEVEMENT - a method of reporting on a range of learner achievements including national and local qualifications, skills, personal attributes, responsibilities, and extra-curricular activities.

RECORD OF LEARNING - a document that contains details of credits awarded to an individual for the completion of unit standards and national qualifications.

REGISTERED ASSESSOR - an assessor appointed by a national standards body to conduct assessments of individuals against unit standards.

REGISTRATION OF PRIVATE TRAINING ESTABLISHMENTS - a process for ensuring that a private training establishment has the capability to provide a sound and stable learning environment.

REGISTRATION OF UNIT STANDARDS AND QUALIFICATIONS - a process for ensuring that unit standards and qualifications have been evaluated and endorsed by national standards bodies as representing an acceptable and exclusive national standard, and so registered with the Authority.

STANDARDS - nationally registered statements of education and training outcomes and their associated performance criteria. See also UNIT STANDARD.

STANDARDS-BASED ASSESSMENT - a process of collecting and interpreting evidence of competence or achievement that are measured in terms of the elements and performance criteria specified within unit standards.

SUB-FIELD - a term describing a specific area of education or training at qualification level, corresponding to an ISCED sub-field and defined in the *Index of Unit Standards and National Qualifications.*

UNIT - see UNIT STANDARD.

UNIT ACCREDITATION - accreditation of a provider to offer a specific unit standard or unit standards.

UNIT STANDARD - a nationally registered set of element or outcome statements and their associated performance criteria, with administrative information.

USER GROUP - all those who derive direct or indirect benefit from a qualification and its component unit standards; generally includes learners, qualified individuals, professional associations, employees and employers, all of whom may be represented, along with providers, in national standards bodies.

WHAKARUNGA - a national standards body representing the Maori interest in the development of unit standards and national qualifications, in both Maori-specific areas and the total Framework.

ISBN No 0-908927-42-8

social & cooperative

problem solving

information