

PANORAMA

European reference levels for education and training: promoting credit transfer and mutual trust

Study commissioned to the Qualifications
and Curriculum Authority, England

European reference levels for
education and training
promoting credit transfer and mutual trust
Study commissioned to the Qualifications
and Curriculum Authority, England

Mike Coles
Tim Oates

Cedefop Panorama series; 109

Luxembourg: Office for Official Publications of the European Communities, 2005

A great deal of additional information on the European Union is available on the Internet.
It can be accessed through the Europa server (<http://europa.eu.int>).

Cataloguing data can be found at the end of this publication.

Luxembourg: Office for Official Publications of the European Communities, 2005

ISBN 92-896-0406-9

ISSN 1562-6180

© European Centre for the Development of Vocational Training, 2005
Reproduction is authorised provided the source is acknowledged.

Printed in Belgium

The **European Centre for the Development of Vocational Training** (Cedefop) is the European Union's reference Centre for vocational education and training. We provide information on and analyses of vocational education and training systems, policies, research and practice. Cedefop was established in 1975 by Council Regulation (EEC) No. 337/75.

Europe 123
GR-57001 Thessaloniki (Pylea)

Postal Address:
PO Box 22427
GR-55102 Thessaloniki

Tel. (30) 23 10 49 01 11
Fax (30) 23 10 49 00 20
E-mail: info@cedefop.eu.int
Homepage: www.cedefop.eu.int
Interactive website: www.trainingvillage.gr

Mike Coles
Tim Oates

Edited by:
Cedefop
Burkart Sellin, Project manager

Published under the responsibility of:
Johan van Rens, Director
Stavros Stavrou, Deputy Director

A zone of mutual trust (ZMT) is an agreement between individuals, enterprises and other organisations on the delivery, recognition and evaluation of vocational learning outcomes (knowledge, skills and competences). It offers practical help with decisions about the value of qualification and certification, further learning and recruitment into employment. ZMTs may be dynamic in nature and may become more or less formal in scope and form according to the mutual confidence and needs of the stakeholders involved. The details of the agreements between organisations can be used to build a framework of recognition based on levels of vocational learning. These reference levels, with their associated descriptors, can form a framework and a language that can be used to compare vocational learning in different settings.

Foreword

The study on reference levels frameworks which was carried out by QCA's research team in late 2003 and early 2004 was commissioned by Cedefop on behalf of the Credit transfer technical working group (TWG) set up by the Commission in November 2002. The brief of this working group was defined in the Council's Copenhagen declaration on increased cooperation in VET from the same year.

The discussions of the TWG have so far indicated:

- (a) that education and training (qualification) levels/frameworks are a central issue for the further development and application of credit systems in both higher education and VET;
- (b) that, following the Bologna process, a wide consensus has developed concerning levels or degree structures within higher education (bachelor, masters and doctorate degrees). A comparable consensus in VET ought to provide an additional reference at national and European levels and an important step forwards in promoting transparency, comparability, transferability and recognition in VET.

The Commission has proposed a draft directive on recognition of professional qualifications (COM (2002) 119), which will replace directives 89/48/EEC and 92/51/EEC on recognition of so-called regulated professions. Four qualification levels are included in this new directive, which was approved by the Council and the European Parliament in spring 2004.

Establishing some form of quantitative accounting of achievement is, therefore, an important element likely to enhance recognition, trust and mutual cooperation. The wider (and the fewer) the qualitative zones, the higher the chances of recognition of prior achievements and the development of mutual understanding at both national and multi-national or European level. Respective zones of mutual trust should also be identified.

Such qualitative elements may be characterised as zones of mutual trust which, as in higher education, operate according to multi-lateral networks of institutions determining their mutual acceptance. Creating such zones of trust within broad vertical levels is significant and reduces barriers to credit accumulation and transfer.

The QCA study aimed to provide the necessary information for identifying and defining the zones in which mutual trust for credits transfer/accumulation in VET ought to exist or to be further developed.

The study focused on reference levels or qualification frameworks (perceived or officially defined within international, national, regional or sector VET systems) within transfer/accumulation processes, and on other necessary zones of mutual trust for developing European or international credit (transfer) systems.

The main task was to prepare recommendations for thorough definition and development of an outcome-based interpretation of reference levels for vocational learning, going beyond a structure or framework based primarily on duration of training or kind of certificate, with a view to defining a respective zone of mutual trust.

At the beginning of 2004, QCA, in close connection with the Commission services and Cedefop, organised, as part of the contract, two consultative meetings with high level experts from several Member States.

Cedefop appreciates the effective and efficient performance delivered. The final report was submitted for consultation and was regarded by the TWG members as very useful and forward looking. The wider dissemination of this report by Cedefop does not imply that the QCA report is officially endorsed either by Cedefop or by the European Commission. The outcomes and recommendations will be further discussed at both technical and political levels.

As this report is of value to practitioners, project managers or planners, irrespective of political follow-up, Cedefop decided to disseminate the findings to support the new Europass, transparency and mobility or exchange activities in VET and LLL throughout Europe. It seeks primarily to promote further development of credit transfer schemes.

Stavros Stavrou,

Deputy Director

Burkart Sellin,

Project Manager

Thessaloniki, November 2004

Preface

This report is the principal outcome of the Cedefop-funded study on Reference levels, zones of mutual trust for the accumulation and transfer of credits: definition of reference levels in vocational education and training. It focuses on two key areas:

- (a) the way in which zones of mutual trust (ZMTs) operate, and whether the concept of ZMTs is useful for both understanding how transparency arrangements operate and for framing public policy designed to enhance access and progression (in employment, education and training);
- (b) whether an agreed framework of levels would facilitate effective allocation of qualifications and of accumulated experience for the purpose of enhancing ZMTs, particularly in respect of increasing European cooperation in vocational education and training.

The authors of this report would like to thank the project reference group for their contributions and advice on the research. The reference group is:

Annie Bouder
CEREQ, France
Gabriella di Francesco
ISFOL, Italy
Georg Hanf
BiBB, Germany
Edwin Mernagh
NAQI, Ireland
Isabelle Le Mouillour
Kassel University, Germany
Hanne Shapiro
Danish Technological Institute, Denmark
Loukas Zahilas
OEEK, Greece

Meetings of the reference group were also attended by Burkart Sellin (Cedefop) and Simon Jones (European Commission).

A synthesis meeting was held at the Qualifications and Curriculum Authority (QCA), London, the United Kingdom, in early March 2004 with additional researchers from several Member States. The authors would like to extend their thanks to all who attended. The comments on the report and the examples provided were important to the completion of this project.

Background research, project management, and the production of the report were carried out by Jason Hall, Bonnie Howard, and Gill Taker at QCA.

Table of contents

1. Executive summary	11
1.1. Research methodology	12
1.2. Definitions	12
1.3. ZMT causes, architecture, variability and evolution.....	13
1.3.1. Formal and informal ZMT mechanisms	13
1.3.2. Purposes	14
1.3.3. International qualification frameworks.....	15
1.4. Background to qualifications framework development	16
1.5. VET and higher education.....	16
1.6. Theoretical considerations	17
1.7. Creating a new metaframework of levels in Europe	17
2. The research and the European context.....	22
2.1. The approach	24
2.2. Definitions	25
3. Understanding ZMTs.....	27
3.1. Causes, architecture, variability and evolution	27
3.2. Regulation support for ZMTs.....	27
3.3. Stimulating informal ZMT mechanisms	29
3.4. ZMTs, signalling and labour market mobility	29
3.5. Intermediate mechanisms	32
3.5.1. Informal and formal	33
3.6. Context and purpose.....	34
3.7. Basic architecture	35
3.7.1. Shapers	35
3.7.2. Responders	35
3.7.3. Vocational knowledge.....	36
3.7.4. Nature of agreement.....	37
3.7.5. Means of communication.....	37
3.8. Exchange value	38
4. Qualification frameworks	41
4.1. Need for a qualifications framework in Europe.....	41
4.1.1. Access and participation	41

4.1.2.	Transfer of skills	42
4.1.3.	Targeting and transparency	42
4.1.4.	Guidance and quality assurance	42
4.2.	Qualifications frameworks development	42
4.2.1.	The purpose of qualifications frameworks.....	43
4.2.2.	Accommodation or prescription.....	44
4.2.3.	VET and higher education	45
4.2.4.	Existing international metaframeworks	46
4.2.5.	Theoretical considerations	47
4.2.6.	Bilateral qualification reference systems	50
4.2.7.	Recent national experience of developing qualifications frameworks.....	50
4.2.8.	Typologies of knowledge, skills and competences.....	51
4.2.9.	A bottom-up approach to defining reference levels.....	52
5.	Creating a new metaframework of qualifications levels in Europe.....	53
5.1.	Questions from potential users	53
5.2.	The specific nature of a reference level framework.....	55
5.3.	Possible structures	57
5.3.1.	Steps towards a practical design of European reference levels	57
5.3.2.	The proposed design: a matrix approach	59
5.3.3.	The vertical dimension.....	59
5.3.4.	Defining the characteristics of levels	62
5.3.5.	The horizontal dimension.....	64
6.	Implementing the reference levels.....	67
6.1.	Guidance on the reference level framework	67
6.2.	Quality assurance issues	68
6.3.	Problems with existing ZMTs	69
7.	Further considerations for the TWG.....	71
7.1.	Development of a technical manual for the proposed levels	71
7.2.	Establishing links between levels and credit systems	71
7.3.	Administrative mechanisms and tools to support revised levels	71
7.4.	Evaluation and monitoring	71
	Annex 1 ISCED 97.....	73
	Annex 2 ISCO and ISCED levels	74
	Annex 3 European training levels, 1985	75

Annex 4 Jaques' levels of task complexity and types of thinking	76
Annex 5 An adapted Dreyfus' 'ladder of competence'	78
Annex 6 Reference levels for language development.....	80
Annex 7 Interskills levels.....	81
Annex 8 Level characteristics for IT training, Fachhochschulen, Baden Württemberg.....	82
Annex 9 Formal national qualifications frameworks studied as part of the project	83
1. Australia	83
1.1. What is the AQF?.....	83
1.2. Rationale and objectives of the AQF	84
1.3. Key objectives.....	84
1.4. Learning pathways	84
1.5. Recognition of prior learning.....	85
1.6. Levels and level descriptors.....	85
1.7. Stakeholders and the grounds for inclusion of qualifications.....	86
2. New Zealand	87
2.1. What is the national qualifications framework?	87
2.2. Rationale and purposes of the NQF	87
2.3. Grounds for including qualifications	89
2.4. Levels	90
2.5. Stakeholders	91
3. Ireland.....	91
3.1. Framework diagram	91
3.2. What is the qualifications framework/system?	92
3.4. Rationale and main purposes	92
3.5. Grounds for inclusion of qualifications	93
3.6. Quality assurance	94
3.7. Main pathways	94
3.8. Stakeholders	94
4. Scotland.....	94
4.1. The framework: diagram.....	94
4.2. What is the qualifications framework/system?	96
4.3. Scottish group awards	97
4.4. Rationale and main purposes	97
4.5. Main pathways	97
4.6. Levels	98

5.	South Africa	98
5.1.	What is the qualifications framework/system?	99
5.2.	Rationale and main purposes	99
5.2.1.	Objectives	99
5.2.2.	Rationale	99
5.2.3.	Grounds for inclusion of qualifications	100
5.3.	Levels	101
6.	Stakeholders	102
Annex 10	Selected qualification systems	105
Bibliography	109
Selected annotated bibliography	117
Websites investigated	125
General websites considered	127

List of tables and figures

Tables

Table 1:	Model of the proposed reference level framework.....	20
Table 2:	ZMT financial system analogue	28
Table 3:	Kinds of mechanisms.....	33
Table 4:	Vertical components of reference levels.....	61
Table 5:	Draft general descriptors for European reference levels	63
Table 6	Model of the proposed reference level framework.....	65
Table 7:	Framework diagram.....	92
Table 8:	The Scottish credit and qualifications framework.....	95
Table 9:	Framework diagram.....	97
Table 10:	Japan’s skill test grades	105

Figures

Figure 1:	Zones of mutual trust	13
Figure 2:	Zones of mutual trust	25
Figure 3:	Highly regulated access	30
Figure 4:	Liaison at licensing level	30
Figure 5:	Uneven regulation.....	31
Figure 6	Weakly regulated arrangements	31
Figure 7:	Zones of mutual trust.....	67
Figure 8:	Cross sectoral support for the AQF	86
Figure 9:	The Danish general educational qualification system	104
Figure 10:	The Greek educational system.....	106

1. Executive summary

This summary outlines the principal outcomes of the Cedefop-funded study on ‘reference levels - zones of mutual trust for the accumulation and transfer of credits: definition of reference levels in vocational education and training’. It focuses on two key areas:

- (a) the way in which zones of mutual trust (ZMTs) operate, and whether the concept of ZMTs is useful for both understanding how transparency arrangements operate and for framing public policy designed to enhance access and progression (in employment, education and training);
- (b) whether an agreed framework of levels would facilitate effective allocation of qualifications and of accumulated experience for the purpose of enhancing ZMTs, particularly in respect of increasing European cooperation in vocational education and training.

For (a), the project has presented a new definition of ZMTs and concludes that the concept has considerable power in explaining how access and progression in employment and in vocational education and training operate.

For (b), the project concludes, on the basis of extensive scrutiny of the form and operation of existing levels frameworks, that a new framework and associated administrative arrangements for its effective implementation seem to be a prerequisite for the proper design and application of credit transfer schemes in VET (ECVET). As a result, the project has proposed a new eight-level framework, which is based on outcomes. The project team has striven to provide an adequate theoretical basis for the new framework, as well as ensure adequate practicability and utility.

In addition, the study team has identified the following emerging issues as areas which would benefit from further research and development work, and from the attention of policy-makers:

- (a) developing a technical manual for implementing the proposed levels framework;
- (b) establishing the links between the levels framework and credit systems;
- (c) developing effective administrative systems for supporting the implementation and operation of reference levels;
- (d) evaluating and monitoring the framework and its accompanying administrative systems.

On the possibility of ensuring effective implementation of the proposed framework, we conclude:

- (a) the existence of a levels framework is insufficient alone; even with the existence of (sectoral/national/transnational) frameworks and listings of recognised qualifications, decisions still need to be taken as to whether any given qualification or body of experience matches the stated requirements;

- (b) criteria are needed for the forms of assessing skills, knowledge and competences; they must be legitimate and be administered effectively in relation to specific outcomes;
- (c) decisions are needed on the forms of (and mechanisms for) public accountability and openness:
 - (i) in arrangements for assigning qualifications to levels;
 - (ii) in formal arrangements relating to licence to practice (backed by legislation);
 - (iii) which might be imposed on highly informal ZMTs which have arisen through short-term labour requirements (skills shortages/gaps).

1.1. Research methodology

The project was undertaken by review of:

- (a) policy documents relating to developing credit and credit systems;
- (b) national and international levels frameworks, including ISCED 97, ISCO 88;
- (c) research literature on the differentiation of levels and taxonomies of occupational performance and education and training;
- (d) research literature on labour market mobility and the operation of factors that adversely affect or beneficially enhance mobility and access to, or cooperation in, vocational education and training.

There were also consultations with research agencies in Denmark, France, Germany, Greece and Ireland to validate the findings on ZMTs and the levels framework, in relation to the VET systems which exist in those countries.

1.2. Definitions

From the outset of the work, definitions of a zone of mutual trust and reference levels were developed to help those involved in the project share a common understanding.

A zone of mutual trust is an agreement between individuals, enterprises and other organisations concerning the delivery, recognition and evaluation of vocational learning outcomes (knowledge, skills and competences). ZMTs offer practical help with decisions about the value of qualification and certification, further learning and recruitment into employment. They may be dynamic in nature and may become more or less formal in scope and form according to the mutual confidence and needs of the stakeholders involved.

Informal ZMTs are frequently established through the imperative of structural skill shortages. These ZMTs shift and change as skill shortages emerge and abate, with different mediating organisations.

While we see legislation, labour market regulation, and labour market agreements as direct formal mechanisms, we see certification, credit frameworks, and processes of accreditation of prior learning as intermediate mechanisms. They have a formal element - usually being a part of public policy - but, are dependant on regulation, etc. for any pervasive purchase on the system. In their ability to condition VET systems and labour markets, therefore, we assign them a weaker influence and characterise them as ‘indirect formal mechanisms’.

We have categorised the mechanisms for ZMTs as follows:

Direct formal mechanisms	Indirect formal mechanisms	Informal mechanisms
Legislation	Credit structures	Recruitment drives
Licensing	Qualifications frameworks	Employer-candidate information exchange
Labour market agreements	Mechanisms for recognition and accreditation of prior learning	Guidance processes
National accreditation systems		Local validation systems
Targeted funding		

1.3.2. Purposes

The research work has established that there are many reasons for the emergence of ZMTs. The key purposes are to:

- (a) design better qualification processes;
- (b) increase mobility of labour;
- (c) facilitate exchange of learners within and between systems;
- (d) create more flexible recruiting processes;
- (e) ensure progression for skilled workers;
- (f) help to meet economic targets;
- (g) generate a record of progress;
- (h) enhance Lifelong Learning (LLL) through improved access to learning;
- (i) enhance LLL through increased learner awareness of skills, etc.;
- (j) ease transition from one education/training provision/level to another;
- (k) reduce repetition in learning programmes;
- (l) improve efficiency of use of resources relating to VET;
- (m) provide a common language to users.

The purposes determine who are the key stakeholders, the time scale for the ZMT to operate and the level of formality required.

We examine informal and formal ZMTs, reviewing the purpose(s) of specific instances and exploring the operation of different mechanisms to support them. We conclude that public policy on ZMTs needs to be highly strategic regarding when to:

- (a) stimulate a ZMT where none existed before;
- (b) intervene strongly to support the operation of a ZMT;
- (c) provide ‘light touch’ support where a ZMT is operating relatively effectively but is in danger of decay and thus losing key public benefits;
- (d) take a deliberate decision not to intervene in a ZMT, since it is operating effectively without public policy support;
- (e) intervene to transform a ZMT (expand it, close it down, etc.).

1.3.3. International qualification frameworks

In addition to the OECD and the EU, other international agencies are pursuing work related to qualifications frameworks; these include ILO (research project on frameworks), Unesco (ISCED) and the World Bank (VET qualifications systems). There are also several occupational classification systems that might be seen as frameworks, notably the national classification of economic activities (NACE) and its international counterpart ISIC. Three frameworks for qualifications stand out in the international literature: the Bologna structures for HE, ISCED 97 (covering all education), and the 1985 European structure of training levels for VET (see Annex 3). These three are designed to be inclusive for qualifications in their field and can be said to be metaframeworks in that national structures can be related to them.

The International standard classification of education was designed by Unesco in the early 1970s and adopted in 1978 to serve as a means of gathering and presenting statistics on education in individual countries and internationally. It has several limitations as a qualifications framework but is used widely and has a set of levels with descriptors. Any development of reference levels should build on the international understanding that has developed around ISCED 97. This will facilitate continuity in many ways, not least in statistical analysis of educational trends. Linked to ISCED is the international standard classification of occupations (ISCO 1988). This four level classification is also important in defining common reference levels since in VET and in HE the field of occupations is a key differentiating component.

1.4. Background to qualifications framework development

While the policy underpinning qualifications frameworks and credits may share a more or less common set of goals, the frameworks themselves are emerging in very different forms. Through the study of existing national and international frameworks, we have identified the following dimensions of variation:

- (a) outcome based evaluation (explicit competence and/or learning outcomes) versus learning input (process or content of programmes);
- (b) levels without descriptors (equating framework) versus levels based on descriptors (descriptor framework);
- (c) integrated (no separate tracks or lines) versus differentiated in terms of two or more tracks or lines;
- (d) whole qualification level versus unit/module level;
- (e) large number of levels or sublevels, some of which may be vacant versus few levels, all of which are populated with qualifications.

Of particular importance is the distinction between descriptor-based frameworks and those which have no descriptors for levels, known as equating frameworks. Both are ‘theory driven’ in that implicit theories lie behind assigning levels to respective qualifications in an equating framework and matching qualifications to descriptors.

One problem that afflicts qualifications frameworks arises when they are used as tools for rationalisation. From this follows the question of the extent to which policy use of the framework seeks to accommodate existing arrangements (passive function) or to change existing arrangements (active function). The accommodation strategy (passive function) suggests a larger number of levels and more generic descriptors, or use of an equating framework with no descriptors at all. The prescription strategy (active function) suggests a smaller number of levels with more tightly specified descriptors. In practice, most (national and transnational) frameworks have been a mix of the two approaches. However, it is vital that policy-makers and developers are conscious of these different orientations.

1.5. VET and higher education

Work on levels of qualifications and programmes and on credit (Socrates and ECTS) has advanced well in higher education (HE), at least regarding input (student workload) considerations. Collaboration by institutions to bring about the ‘three cycles of HE understanding’ and the more recent Tuning project on curricula agreements in HE together with the three core elements of the ECTS system (course information, mutual agreement between institutions and use of ECTS systems) are model European ZMTs. While frameworks for non-HE qualifications are gaining ground, credit transfer in VET is generally less developed.

1.6. Theoretical considerations

We have reviewed literature from a range of sources to support developing a robust set of reference levels.

First we consider the work of Jaques, *Requisite organisation* (1996). This suggests that the demand, complexity, prior knowledge and importance of tasks lie in the time scale over which they are normally expected to take place. In determining European reference levels, it is possible to use Jaques' work to support an eight level framework, defining within each level the kind of activities one would expect to find.

More theoretical insight into hierarchies of performance is available from Dreyfus (1992). Work on reference levels can be informed by Dreyfus' definition of a sequence of 'expertness'. While he offers a qualitative hierarchy in capability, other writers have embellished it with descriptions of learning modes that may also be useful to European reference levels. It is interesting to note the use of a qualitative descriptor for levels. Despite the need for user-friendly terminology for European nations (numbers are simple to use) the key attribute of this qualitative approach is a blurring of the boundaries between one type of work and another.

We have also examined credit-assigning systems such as Interskills (<http://www.interskills.info>), formal national frameworks of qualifications from Australia, Ireland, New Zealand, Scotland, South Africa, and the classifications of qualifications and/or training in Denmark, France, Germany, Greece, Italy and Sweden.

1.7. Creating a new metaframework of levels in Europe

It would be relatively easy to define a set of reference levels using the main international reference systems described earlier. However, while this would build on any ZMTs associated with these frameworks, it is likely that tensions would grow as a result of national differences of interpretation of descriptors and possible insensitivity to the nature of VET, particularly its breadth. Given that the reference levels are required to sustain a credit transfer and accumulation function, the need to look for more grounded reference levels was clear. Rooting a reference level framework in its potential uses provides us with a logical flow of ideas from purpose through to design considerations.

First we consider the purposes of a European reference levels framework. These originated from examining questions which users may want the framework to answer. Our aims are:

- (a) a means of understanding the provision of knowledge, skills and competences in different VET systems across the wider European Unity;
- (b) a way of developing a convergent trend in European VET systems so barriers to movement of people, skills and enterprises are reduced;

- (c) the basis of developing ZMTs across country boundaries and possibly across sectors within a country;
- (d) a means of structuring sector activity so that it becomes coherent and integrated with work in other sectors;
- (e) the basis for equating qualifications, training and work experience across countries;
- (f) the basis for ECVET;
- (g) a means of linking VET and HE in a single qualifications framework;
- (h) supporting target setting and planning for the medium term;
- (i) facilitating cooperation between providers of VET in Europe;
- (j) providing a means of recognising progression in learning between levels and within levels.

Research suggests that development of reference levels without stakeholders is likely to be limited, protracted in time and heavily focused on overcoming issues and differing interests. It is essential that we consider possible users when designing the framework. Users are likely to be:

- (a) European policy-makers;
- (b) national policy-makers (in ministries, in government organisations and major independent players);
- (c) regional policy-makers;
- (d) universities and other HE institutions;
- (e) professional bodies (sectors and trade unions);
- (f) analysts (for example labour market researchers);
- (g) employers;
- (h) training providers, VET managers, designers and recruiters;
- (i) applicants for courses and jobs in another country.

Having identified purposes, stakeholders and some key issues that reference levels need to address, the project examined the options for defining the reference level framework. This should have certain qualities if it is to fulfil the purposes. For example it should:

- (a) be easily understood in terms of what it is, what it can do and what it cannot do;
- (b) enable increasing development of ZMTs so that it builds on current practice and takes account of the ways reference level frameworks become popular and influential;
- (c) be consistent with existing widely used frameworks;
- (d) cover all aspects of VET, i.e. training provision, qualifications development, assessment of work based knowledge and skills, certification;

- (e) be especially conducive to linking quality assurance and assessment with a level;
- (f) be capable of offering a meaningful reference point within different contexts for VET such as occupational sectors and fields;
- (g) recognise social reality regarding labour market conditions and wider social goals and be capable of evolution to meet pressures for change;
- (h) include HE frameworks and levels;
- (i) facilitate sector involvement.

Alongside this, there are structures which cannot be ignored in defining European reference levels:

- (a) a common framework with ISCED that has already established a level system for equating initial education systems;
- (b) an accepted qualifications structure for qualifications awarded in HE;
- (c) NACE (ISIC) has become a foundation for sector definition;
- (d) the emerging EU level system for recognising regulated professional qualifications.

In addition, it must be allowed to accommodate input models of VET and models based on assessed outputs and it needs to be flexible in allowing a European credit system to develop.

In the light of these requirements, and on the basis of the theoretical and empirical enquiry undertaken in the project, we propose a system with eight discrete levels. Additional sublevels may tentatively be defined as follows:

- (a) partial: indicates that the qualification or completed training programme or job experience, while predominantly matching the specific descriptors, has some significant gaps that need to be acknowledged;
- (b) modal: indicates that there is a good match of the qualification or completed training programme or job experience to specific descriptors;
- (c) exceeds: indicates that there is a complete match of the qualification or completed training programme or job experience to the requirements of the specific descriptors at this level and some additional elements that exceed the requirements of the descriptors at this level.

The eight-level structure has the merit of clarity and simplicity. However, the variety of qualifications and VET programmes is such that programmes which are significantly different in character would still 'qualify' for the same level, e.g. level 3. Sublevels may be essential for discriminating between these significantly different programmes and the outcomes which are derived from them. For example, on the basis of research regarding the level of study and of outcomes, we would suggest that the Danish apprenticeship scheme should be located within level 3. However, it is significantly broader and deeper in its content and coverage than the United Kingdom apprenticeship, also a level 3 programme. While both should be

located in level 3, there must be some means of discriminating sensitively between them; sublevels allow location at different sublevels within the same level. This also tackles the severe political problems which have emerged with frameworks such as ISCED, where different national governments have felt uncomfortable about the location of significantly different programmes in the same level.

The sublevels may be important to the operation and integrity of the proposed framework. They enable a broad, eight level overall structure to be used - underpinned by research on the structure of work performance and with the merit of clarity - and at the same time allow sensitive location of different programmes and outcomes within each level and within the overall structure.

Although there are several benefits to assigning qualitative labels to levels we propose that the TWG continues to use numbered levels and leave individual nations to decide whether they wish to assign qualitative names for levels (e.g. ‘basic’; ‘technician’, etc.).

Table 1: Model of the proposed reference level framework

European reference level ⁽¹⁾	General descriptor	Dimension A qualification	Dimension B experience of work
1	Learning normally acquired during compulsory education and considered as contributing to a general knowledge and development of basic skills. Learning is not usually contextualised in work situations.		
2	Completion of compulsory education which includes an induction to work. Basic knowledge of work can be acquired at an educational establishment, in an out-of-school training programme, or in an enterprise. Generally it is not occupation-specific. The range of knowledge, skills and competences involved is limited. Qualification at this level indicates a person can perform basic tasks and exercise skills in a controlled environment. All action appears to be governed by rules defining allowable routines and strategies.		
3	Completion of a basic vocational training qualification introducing the idea of job competence. It is normally considered part of upper secondary education. This qualification shows a person has basic skills suitable for many job functions and the capacity to carry out tasks under direction. Most action of people at this level of qualification is deliberate repetitive application of knowledge and skills.		

4	Qualification at this level normally includes upper secondary education and a work based training programme in an alternance or apprenticeship scheme and involves developing knowledge linked to a specific occupational field. People qualified at this level are able to work independently on tasks and have the capacity to apply specialist knowledge, skills and competences. They will have extensive experience and practice in both common and exceptional situations and be able to solve problems independently using this experience.		
5	Completion of a main vocational training qualification such as apprenticeship or further education and training. This form of qualification involves significant theoretical knowledge and involves mainly technical work that can be performed independently and entail supervisory and coordination duties. Qualification at this level indicates a person can deal with complex situations and their performance can be a benchmark for others. They will have considerable experience and practice across a wide range of work situations.		
6	Qualification at this level covers a high level of theoretical and practical knowledge, skill and competence, entailing a mastery of the scientific basis of an occupation. It means a person can deal comfortably with complex situations, is generally autonomous and can assume design, management and administrative responsibilities. Such qualification is equivalent to the first Bologna cycle of higher education.		
7	These qualifications recognise specialist theoretical and practical learning that is required for work as (senior) professionals and managers. People qualified at this level will have a wide breadth and depth of knowledge and be able to demonstrate high levels of specialist competence in an area. They will operate independently and supervise and train others where they can be inspiring. These qualifications are equivalent to the second Bologna cycle of higher education.		
8	These qualifications recognise people as a leading expert in a highly specialised field dealing with complex situations and having the capacity for long-range strategic and scientific thinking and action. Such experts develop new and creative approaches that extend or redefine existing knowledge or professional practice and often teach others to be experts and masters. The qualifications are equivalent to the third Bologna cycle of higher education.		

(¹) Training providers or bodies responsible for accreditation/assessment may subdivide a level into sublevels, e.g. partial, modal or exceeds.

2. The research and the European context

The Lisbon European Council in March 2000 set the European Union the strategic goal of becoming the most competitive and dynamic knowledge-based society in the world. The development of vocational education and training is a crucial and integral part of this strategy. The Barcelona European Council in March 2002 reaffirmed this important role. The conclusions give a mandate to introduce instruments to ensure the transparency of qualifications and, in parallel to the Bologna process in higher education, to develop closer cooperation in VET. Barcelona also set the objective of making European education and training systems a world quality reference by 2010 (points 43 and 44 in the European Council presidency conclusions, Barcelona 15 and 16 March 2002).

The cooperation effort needs to include all major actors, irrespective of level or institutional context. Legal and administrative mechanisms for coordination and control, as typified by national qualifications systems, need to be supplemented by other instruments and approaches such as exchange of good practice, dialogue and peer review. In their discussion of the principles for increased cooperation, the Directors General for Vocational Training (DGVT) of EU Member States underlined that work must be based on the principles of transparency and mutual trust. Furthermore, at the meeting of the DGVTs in Santiago de Compostela, Spain, 23-24 April 2002, there was general agreement on the following points:

- (a) there is a need for increased cooperation in VET, on a voluntary and ‘bottom-up’ basis, and according to Articles 149 and 150 of the Treaty, to fulfil the mandate of the Barcelona European Council;
- (b) the active involvement of the social partners, the EEA countries and the candidate countries is essential to the success of this initiative;
- (c) a long-term perspective should be applied;
- (d) the aim of increased cooperation should be to promote mutual trust, transparency, and increased recognition of qualifications on the one hand, and to raise the status (regarding quality) of VET on the other.

Following the conclusions of the European Council meetings at Lisbon and Barcelona, ministers responsible for VET in 31 countries, the social partners at European level and the Commission meeting in Copenhagen in November 2002 adopted the so-called Copenhagen declaration on enhanced European cooperation in vocational education and training. The declaration covers several key domains for the success of the Lisbon and Barcelona strategy, such as building up a true European Labour Market through transnational recognition of competences and qualifications and improving the quality of VET.

Various administrative structures were put in place following the Copenhagen declaration, one of which was establishing a technical working group made up of representatives from Member States and social partners to investigate the setting up of a European credit transfer system for VET (ECVET). This group has given a mandate to Cedefop and the Commission

to launch two research projects to feed its discussions towards defining principles and approaches to ECVET.

One study is based in Kassel University in Germany and aims to assess how far, and under which conditions, existing approaches may be relevant to the development of ECVET. The main expected outcomes are a comprehensive overview of different applicable schemes, options and/or models for credit transfer systems, together with proposals for a set of common principles for ECVET and for a pilot scheme to be tested in different countries.

The second study was given to QCA and is concerned with determining a possible European framework for defining and allocating reference levels (see mandate of the TWG) that are based on an understanding of zones of mutual trust. The last phrase refers to the arrangements where qualifications carry currency across sectors and across national boundaries.

The QCA project team has examined literature for the ways in which mutual trust for transparency and credit transfer in national VET systems currently exists. Particular attention has been paid to the potential of further developing zones of mutual trust with a view to supporting the introduction of reference levels to support ECVET. The zones of mutual trust (ZMT) project was commissioned by Cedefop running from September 2003 to March 2004. The study aims to identify and define zones in which mutual trust is necessary for enabling credit transfer/accumulation in VET and focuses on:

- (a) reference levels or qualification frameworks which allow credit transfer/accumulation;
- (b) other necessary zones of mutual trust for developing credit (transfer) systems at the European or international level.

The study has engaged in:

- (a) defining zones of mutual trust (ZMTs) and an analysis of how such zones operate; this includes providing examples of ZMTs from different EU countries;
- (b) how national and transnational arrangements might be managed to enhance the operation of formal and informal ZMTs;
- (c) how a new set of reference levels might be formulated to enable credit transfer and accumulation.

The aim is to produce policy support to national and European level stakeholders to enhance labour mobility, to ease access to and increase cooperation between vocational education and training provision.

By engaging with the concept of ZMTs and developing reference levels the Commission recognises the existence and value of bottom-up developments in these matters. It is vital to understand the complex links between policy instruments such as qualifications frameworks, administrative systems designed to implement such instruments (such as qualifications approval systems, quality assurance arrangements, etc.) and the negotiations and discussions which precede and accompany such instruments. In many national settings, frameworks are the consequence of such discussions; they represent a carefully derived set of agreements and

relationships. These agreements and relationships frequently relate to discussions which have taken place over decades (Cockrill, 1997). In other words, a framework of levels by itself can best be seen as a necessary but not sufficient instrument. It only has purchase where it is embedded in these wider, deeper processes. This has not always been made clear in nations which have only recently considered the production of a qualification framework. Great attention has been paid to the form of the framework, and little to the administrative apparatus or necessary mechanism for its implementation, or to the negotiations on agreements between different industrial sectors, social partners, education and industry interests, etc. (Millar, 1997).

The focus of the work of this project has been on understanding not only the interplay of these elements, but also on the contextual factors which affect the creation of zones of mutual trust. The proposed levels framework (see section 5) has focused carefully on an outcomes-orientation, on allowing access to recognition independent of training pathways (in line with the Commission's work on informal and non-formal learning), and concentrating on levels of working activity (*Beruf; profile; metier*). The work also emphasises the importance of using a common language for occupations (i.e. type of work related activity and necessary skills) as well as skill levels.

Although the project focuses on initial and continuing VET and LLL, the work on defining and operating zones of mutual trust has also considered similar work in respect of higher education and the regulated professions. The concept of zone of mutual trust emerges as a powerful tool for understanding arrangements in these areas as well as in initial and continuing VET.

2.1. The approach

The topic is timely, in the light of the gathering pace of developments in credit frameworks, national qualifications frameworks and transnational classification. International mobility of labour is increasing; it is important to establish systems that secure the twin aims of facilitating access and mobility (for the person) and protection (in respect of consumers). This is a delicate balancing act. With an overarching aim of increasing the availability of skills to society, the economy and individuals, new systems can as easily and unintentionally erect artificial barriers as they can allow better communication of individuals' attainments. Indeed, the recognition of achievements and attainments is hampered by both major and minor differences in recognition systems (the size of qualifications, their content and scope, differing occupational classifications, etc.). The project has explored whether a metaframework can be developed (recognising that ISCED and ISCO already strive to offer transnational tools for comparison) which cuts through these problems.

QCA's interest in the project stems particularly from the attempts in England to develop a national qualifications framework, and a failure to date to relate national developments in this area to other transnational classifications and frameworks. Work with higher education

parties within the system

The current form of this definition is as follows:

A zone of mutual trust is an agreement between individuals, enterprises and other organisations concerning the delivery, recognition and evaluation of vocational learning outcomes (knowledge, skills and competences). ZMTs offer practical help with decisions about the value of qualification and certification, further learning and recruitment into employment. They may be dynamic in nature and may become more or less formal in scope and form according to the mutual confidence and needs of the stakeholders involved.

Details of agreements between organisations can be used to build a framework of recognition based on levels of vocational learning. These reference levels, with their associated descriptors, can form a framework and a language that can be used to compare vocational learning in different settings.

The research team has been careful in its use of the term ‘sectors’. This term is used variously in different national debates and by different researchers and agencies to refer to: sectors in provision of education and training (e.g. the ‘private training sector’, the ‘higher education sector’); sectors in economic activity (e.g. industrial sectors such as mining, healthcare); and different occupations or labour market segments (e.g. occupational families or fields). In this report we are careful to prefix the term sector with other words, when a restricted meaning is intended, for example the ICT occupational sector.

Finally we intend the word qualification to follow the Cedefop definition. A qualification is an official record (certificate, diploma) of achievement that recognises successful completion of education or training, or satisfactory performance in a test or examination, and/or the requirements for an individual to enter, or progress within an occupation.

We recognise that ‘qualification’ has primarily a personal dimension beyond official recognition: the notion of ‘personal profile’; the set of skills, knowledge and competences which an individual has built up through formal, informal and non-formal processes. Through these, someone may be ‘qualified’ to undertake a role or to complete tasks by virtue of skills and knowledge additional to or different from those recognised formally through certification.

3. Understanding ZMTs

3.1. Causes, architecture, variability and evolution

The concept of a ZMT is relatively new. Few researchers, even in VET, seem to be familiar with the term. However, after establishing a formal definition, the QCA researchers have found it to be a powerful means of understanding the operation of selection processes and credit recognition arrangements. By developing greater understanding of the operation of these processes, it is possible to suggest strategies that national and European administrations or agencies can put in place for enhancing them.

There is a tendency for national governments to think in terms of unitary systems that operate through centralised rules, underpinned by legislative arrangements (Green, 1997). However, labour markets evolve and change in ways that contradict simple models and show extreme diversity in how different training providers and occupational sectors or segments operate; contrast for instance the highly structured and regulated world of medical practice and the rather informal employment practices in the hospitality sector. Even in advanced economies, the existence of the ‘shadow’ economy - ‘black’ labour and production - shows a sustained tendency for economic systems to include informal and ‘hidden’ activities alongside more regulated, overt employment systems. The formal and the informal have a habit of coexisting and evolving in tandem. This study suggests that concepts of formal and informal can helpfully be applied to the agreement arrangements that characterise ZMTs. There exists a range of mechanisms and practices that establish and sustain zones of mutual trust (ZMTs), which span a spectrum from formal to informal. This applies to national as much as to European or international contexts.

Zones of mutual trust involve more than recognition arrangements. The latter can be relatively straightforward and instrumental as would be described by, for example, an agreement to swap a loaf of bread for a half kilo of butter. Recognition arrangements can be described in law and leave little room for change in exchange value. ZMTs go beyond this and are more organic. They can establish themselves and change with changing conditions. They involve perceptions and accommodate community values. Sometimes they are ‘owned’ by no one but basically understood by everybody.

3.2. Regulation support for ZMTs

Regulation - i.e. a more formal dimension to established zones of mutual trust - is crucial to providing adequate protection for both workers and consumers. Recent EU proposals to allow medical practitioners to work for short periods of time in a country other than the one in which they were initially trained and licensed have met with opposition from both individual

medics and their professional bodies. One key issue is concern that medics under suspension or investigation in their own country would be able to practice in another, since there currently is no transnational sharing of information on these matters. Simply showing evidence of successful initial and further training and certification risks falling short of the trust requirements of medical practitioners and does not, in the practitioners' view, provide adequate protection to patients (consumers of health care). This raises an interesting theoretical issue; regulations are not, in themselves, ZMTs. Rather, regulation supports the social processes that constitute a ZMT. ZMTs exist through the behaviour of people who are participating in them, operating through, or anticipating, common values and concerns. ZMTs can not be imposed; they must be based on consensus and voluntary participation. This is applicable also for any European qualifications framework or levels structure.

To illustrate further the implications of this last observation, ZMTs can be considered to operate in the same way as financial systems, through complex, mediated, common consent. This is exemplified in the way in which currency secures its exchange value. A one-euro coin is not in itself worth one euro, as the metal which makes up the coin is worth considerably less than one euro. What makes the coin worth one euro is the common consent between people within the market that the coin is worth that much. The whole banking system is based on this mutual consent and agreement, reinforced by the complex, formal and elaborate arrangements which control borrowing and exchange. The reinforcement through such mechanisms is vital; it allows a banker's draft (written on a piece of paper worth a fraction of a cent) to be worth, for example, EUR 10 000.

This helps understand the function and operation of ZMTs:

Table 2: ZMT financial system analogue

Financial system	Zone of mutual trust
Coins, notes and drafts	Skills, knowledge and competence
Assigned value for purchasing and exchange	Assigned value for access and reward within education and/or employment
Supported by mechanisms such as exchange rates, banking, etc.	Supported by mechanisms such as sector-level skills agreements, qualifications frameworks, etc.
Operating in a context of national and EU monetary and fiscal policy, etc.	Operating in a context of skill supply and demand, national and EU education and training policy, labour market regulation, etc.
Quality assurance through national treasuries, compliance agencies, central bank, etc.	Quality assurance processes managed by government agencies, sector bodies, professional bodies, etc.

We suggest that this is not just a crude comparison: behind these elements are complex social systems which operate through the exercise of analogous mechanisms. It is important to examine how monetary exchange is supported by highly practical mechanisms which exist in both private and public domains and thus how exchange value can be assigned and supported in respect of skills, knowledge and competence in vocational education and training.

3.3. Stimulating informal ZMT mechanisms

While regulation and licensing is the most prominent contextual factor affecting ZMTs, skills shortages frequently stimulate selectors to adopt proactive approaches, to recruitment for instance, which result in new ZMTs being set up. An example of this is in the construction sector in several Member States. With the emergence of acute and chronic structural skills shortages in areas such as steel fabrication and carpentry, employers have used employment agencies to recruit skilled workers in countries from the former Eastern bloc. As there is little understanding of the certification arrangements in those countries, recruitment is on the basis of employment history, i.e. work experience and practice. Informal ZMTs are thus established through the imperative of skill shortages, though they can be provisional in character and last only as long as such shortages exist. These ZMTs change with skill shortages in different sectors, e.g. in ICT, mining, building industries and involve temporary actions, such as when recruitment offices were set up for teachers and nurses in South Africa, for recruitment to the United Kingdom.

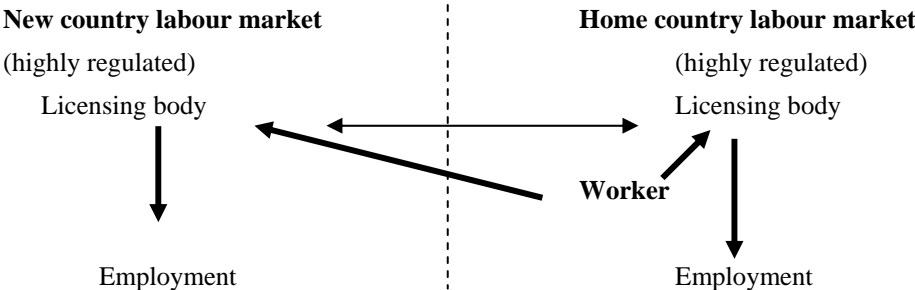
3.4. ZMTs, signalling and labour market mobility

Econometric perspectives on licensing and legislation focus on the extent to which these allow appropriate labour market mobility and access to education and training. In some instances, such measures may enhance mobility by giving a clear signal that an individual has appropriate knowledge and skills (Coles and Collar, 2003). In others, they may have negative effects: the signalling may be too strong and may prevent selectors in education and employment from looking outside the pools of 'traditionally-labelled' labour. In addition, there may be implicit or explicit restrictions on entry to learning programmes which result in a given label: the area may be stereotyped as 'male' or 'female' labour or ethnic groups may be excluded from a given route, as may people from particular social and/or cultural backgrounds (Clayton, 2000).

Transnational ZMTs can operate through different patterns of interaction at formal and informal levels, or through formal and informal mechanisms. This is illustrated in the following diagrams which represent progressive weakening of regulation arrangements around employment. The situations described below include occupations covered by directives on regulated occupations.

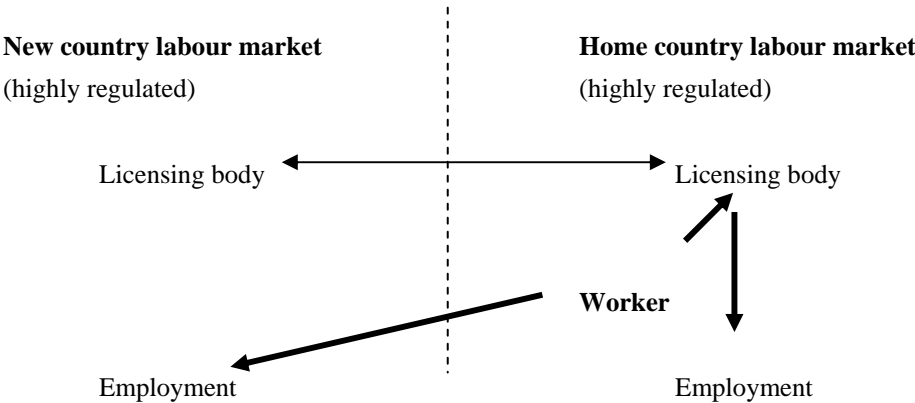
Note that the thin arrows (\longrightarrow) relate to control of access, while the main transaction in accessing employment is indicated by the thick arrows (\longrightarrow).

Figure 3: *Highly regulated access*



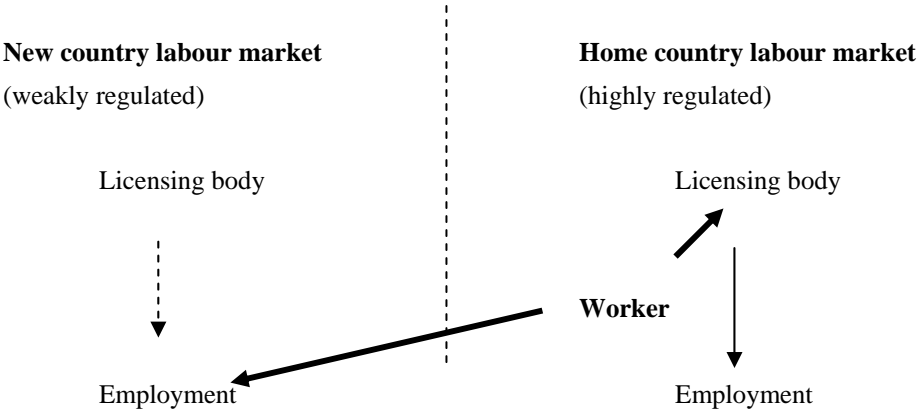
This illustrates the current situation in general medical practice within the EU, where a general medic must be fully certificated within a national setting to practice. Although reciprocal recognition exists between the licensing bodies, workers must meet additional requirements set by the licensing body in the United Kingdom before they can gain access to employment. There is much controversy in the profession in the United Kingdom regarding current proposals to remove the additional requirements, and move to a system dependent on licensing from the home country (within the EU). It is argued that problems may arise where a medic is under investigation in the home country for potential malpractice, with this information being held confidentially by the home licensing body until any case is proven. This may be resolved through formal information exchange arrangements between the licensing bodies in the different nations and without retention of the existing additional requirement. This indicates the importance of administrative arrangements in ZMTs.

Figure 4: *Liaison at licensing level*



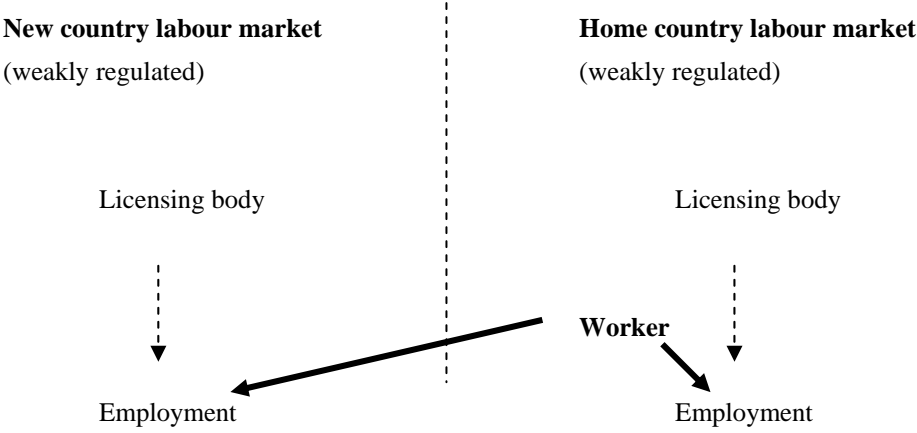
In this situation, the reciprocal arrangements between licensing bodies allow direct access to the labour market in the new country labour market.

Figure 5: Uneven regulation



This illustrates the set of relations between management level work in the hospitality sector, where work in the home country (e.g. Germany) requires licence to practice through initial VET, yet employment in another country is only weakly regulated. This enables open access to employment. There may be financial benefit for employers in the new country labour market, since they can readily gain workers with high skill levels which are securely signalled by formal certification in the home country, but outside formal wage structures, owing to the weakness of licensing in the employment setting.

Figure 6: Weakly regulated arrangements



The weakness of regulation in the two countries means that a worker can gain access to employment in both settings without formal licensing. For construction workers, labour migration under these weak arrangements can be high, where skill shortages exist in the new country setting and strong economic differentials between countries stimulate home country workers to seek employment in the new country setting.

Into this comes the crucial issue of self-perception, a much-neglected area in the study of mobility. Most models assume action on behalf of selectors (in education and training, and in employment), within a context conditioned by legislation and prevailing market conditions relating to labour flows. Often omitted is the issue of self-nomination. A person may have the skills which would enable movement to a new occupational area, but their self-conception (identity) suppresses any self-recognition that this might be possible, or places restraints on them feeling that any such movement is desirable or possible (Koniordos et al., 2001). Even where employers and selectors for education and training adopt active measures to try to overcome these constraints - such as targeted recruitment drives - self-perception can operate as a fundamental constraint. This is evident in the failed attempts to broaden entry to higher education in England in terms of social background, despite the overall significant growth in numbers progressing to higher education in that country (Deane and Watters, 2004; West, 2000). It is also evident in the coexistence in certain urban areas of high levels of unemployment in certain social groups, alongside skills shortages in areas into which these workers could be recruited.

This issue of self-conception (identity) is vital to the concept of 'mutual' in zones of mutual trust.

3.5. Intermediate mechanisms

While we have conceptualised legislation, labour market regulation, and labour market agreements as direct formal mechanisms, we see certification, credit frameworks, and processes of accreditation of prior learning as intermediate mechanisms. They have a formal element - usually being a part of public policy - but, are dependant on regulation, etc. for any pervasive purchase on the system. In their ability to condition VET systems and labour markets, therefore, we assign them a weaker influence and characterise them as 'indirect formal mechanisms'. Measures such as credit frameworks, etc. have been viewed in a positive light by some economists (OECD, 1996).

The apparently shifting role of formal qualifications is vital in understanding the balance of informal and formal mechanisms. A literature survey by QCA (Coles and Collar, 2001) suggested that while each person's level of initial qualifications is crucial to occupational progression, the role of qualifications in subsequent progression and mobility is reducing and employment history (accumulated experience) is becoming more significant. This has important informal elements: the way in which curriculum vitae are constructed; the way in which a 'narrative' is constructed and represented through interviews, etc.; and the networking which results in getting an interview. With these informal mechanisms, cultural and social capital come into play. Some individuals have greater skills than others in representing their employment history as a coherent narrative, identifying relevant and irrelevant elements, contextualising language, etc. to the selection processes. This differential in cultural and social capital may be having a concentration effect in respect of employment opportunities, income, etc. Figures suggest growing disparities between the most- and least-

well-off in key nations; those who already have extensive and relevant employment histories are those most likely to be given (and exploit) opportunities for progression and mobility (Brown and Keep, 1999).

‘Power’ thus has a key role in understanding ZMTs, concerning how, where and why they are set up and how they operate. It is important not only to the relationship between an individual and the selector(s) in employment and education/training - the gatekeepers to progression and mobility - but also in respect of the differential power held by different social groups.

3.5.1. Informal and formal

Any effective theorisation and description of ZMTs should include consideration of the full spectrum of formal and informal mechanisms, as well as underlying mechanisms which can potentially create inequalities:

Table 3: *Kinds of mechanisms*

Direct formal mechanisms	Indirect formal mechanisms	Informal mechanisms
Legislation	Credit structures	Recruitment drives
Licensing	Qualifications frameworks	Employer-candidate information exchange
Labour market agreements	APL ⁽¹⁾ mechanisms	Guidance processes
National accreditation systems		Local validation systems
Targeted funding		

⁽¹⁾ APL: accreditation of prior learning.

This classification of mechanisms enables better understanding of how policy can be designed and adjusted to give greater support to ZMTs. In particular, the following are key issues:

- (a) in which areas (educational and labour market) will formal legislation/licensing enhance or counteract the building of ZMTs?
- (b) are existing data and review systems able to detect when formal measures and regulations are inhibiting or enhancing mobility, and how is it possible to detect patterns of inequality based on a lack of mutual trust?
- (c) how and what kind of informal mechanisms could be supplemented by formal measures and would this be generally a good step?

- (d) should informal mechanisms be supported - and/or stimulated - by state financial and/or political support, etc.?
- (e) what other measures could increase the chances of constructing effective ZMTs?
- (f) are there further forms of ZMTs that should be identified and supported as a means of increasing sustainable cooperation in VET and LLL within Europe, both for providers of, and participants in, training?

3.6. Context and purpose

Understanding context and purpose is vital in analysing the functioning of ZMTs. The context of a recognition system is unlikely to be neutral: it can facilitate or hinder recognition. For example, in a rapidly expanding occupational sectoral environment, where jobs are being created and skills demand is outstripping supply, enterprises may establish informal working relationships with a greater number of training providers or deeper, formal agreements with some core providers. Another example of the influence of context is in an occupational sector with heightened public attention to health and safety, such as the childcare sector, where strict quality assurance processes may condition minimum acceptable levels of recognition of relevant skills.

Purposes influence ZMTs. There are many motives for establishing a ZMT; among them are to:

- (a) design better qualification processes;
- (b) increase mobility of labour;
- (c) facilitate exchange of learners within and between systems;
- (d) create more flexible recruiting processes;
- (e) ensure progression for skilled workers;
- (f) help to meet economic targets;
- (g) generate a record of progress;
- (h) enhance LLL through improved access to learning;
- (i) enhance LLL through increased learner awareness of skills, etc.;
- (j) ease transition from one education/training provision/level to another;
- (k) reduce repetition in learning programmes;
- (l) improve efficiency of use of resources relating to VET;
- (m) provide a common language to users.

The purpose determines who are the key stakeholders, the time scale for the ZMT to operate and the level of formality required.

3.7. Basic architecture

The wide range of ZMTs has common elements and these provide the basic architecture. All ZMTs have:

- (a) shapers: people behaving in ways that shape the ZMT;
- (b) responders: people whose behaviour is being shaped by ZMT;
- (c) vocational knowledge: an area of vocational knowledge that is common to those involved;
- (d) nature of agreement: stakeholder agreement or understanding about the levels or value associated with specific vocational learning outcomes;
- (e) means of communication: a medium of communication between stakeholders.

We can take each of these elements and expand them to show the types of ZMT.

3.7.1. Shapers

These include: regulators, professional bodies, trade unions, recruiters in industry, selectors in education and training. The agenda and perceptions (of market conditions, of priorities, etc.) of shapers have a crucial impact on the form and operation of a ZMT. This can be seen, for example, in: the need to increase supply of ICT teachers (Greece); the need to open access from the vocational route into higher education (Germany); the need to increase the mobility of key professionals (agreement between Belgium, Greece, Italy and Hungary); the need to increase participation in vocationally-related higher education (England). Although their behaviour and views heavily condition the form and operation of a particular ZMT, the shapers may themselves feel that they are constrained or determined in what they are doing and what action they can take. For example, employers may be experiencing a crisis in recruitment (due to labour market conditions over which they have little or no control) but nonetheless they have considerable influence over the form of ZMT which is set up to respond to this crisis. A similar situation applies to admissions staff in education and training institutions, who are instructed by central government to address the gender imbalance in recruitment to specific training programmes. The targets and imperatives may not come from them (and so they experience them as an external pressure), but they have considerable control over the arrangements they set up for a new set of access arrangements.

3.7.2. Responders

These include employees, job seekers, learners, and communities of practice. Although generally subordinate, the power of responders increases in situations of skill shortages; bargaining power increases as the value of skills and knowledge increases. In respect of shifting power relations, some interesting processes of 'valuation' of prior learning are emerging as bottom-up developments rather than state-initiated. In Switzerland, the CH-Q

development has been initiated through an association rather than through state initiative, and is oriented towards learner empowerment. The CH-Q process is a portfolio-based approach to recognition (valuation) of prior experience and achievement. The portfolio is produced through processes of counselling and systematic identification of skills and knowledge. It is designed to help workers/learners to access new employment, rejoin the labour market or gain access to education and training. Consistent with many other portfolio-based developments in recognition of prior learning, CH-Q is notable because of its origin as a bottom-up development.

As outlined in Figure 4, the self-perception of workers and learners is a crucial and often-neglected area, where certain groups may simply not see themselves as ‘appropriate’ for a given profession (women in engineering and construction; men in the care professions). Thus they may not possess overt bargaining power, but may condition the possibility of setting up a ZMT. Recruiters may be aware that non-traditional groups have skills which may be utilised, but the self-perceptions of such groups may mean that few from the non-traditional group come forward to take advantages of the new opportunities for access and progression which have been set up.

3.7.3. Vocational knowledge

ZMTs can operate in a highly specific vocational field. For example, when an enterprise is experiencing a skills shortage it may develop new ZMTs to recruit trained workers with specific skills in the area of shortage, a ‘specific exchange value’; there are numerous examples in construction, care, ICT, oil production, etc. This can include action to remove an ‘administrative’ blockage which has inhibited mobility and access, as in the work in Germany to encourage progression from the vocational track into higher education. Here, there is no fundamental reframing of knowledge or skills requirements but a renegotiation and promotion of routes to allow enhanced progression and mobility.

Interesting examples occur where VET providers and employers consider how to access skills in groups among whom they have not previously recruited. This can include both trying to find specific skills and/or identifying more generic skills that can be adapted to new demands, a combination of ‘specific’ and ‘general exchange value’.

ZMTs operating at the level of ‘general exchange value’ - rather than specific knowledge and skills - are common in higher education (US credit systems, ECTS, etc.) but also are emerging in other phases of general education. One example is the Nordic credit recognition system at general upper secondary level, where students who have completed upper secondary education in another Nordic country may continue study at a higher level in their own home country, based on the credit that they have obtained.

3.7.4. Nature of agreement

ZMTs include an informal or formal agreement. These can include:

- (a) input models using time-based criteria: major educational programme completion such as duration of initial (formal) education and training, and module time allocation including different types of learning. Both of these can be referenced to subsidiary quality assurance systems, such as recognition of institutions and use of criteria governing education/training programmes (e.g. general, academic, technical, vocational, occupational);
- (b) outcome models: often based on standards or competences or criteria which could be general education outcomes or general descriptions of competence or specific skills to allow performance of a given job, profession or task;
- (c) mixed input/outcome models requiring the use of occupational standards to shape a training programme;
- (d) operational context dependent models requiring the setting out of levels of complexity of working situations in which people practise their skills;
- (e) reference point models, e.g. using equation statements referencing qualifications to predefined levels and the criteria on which they are based, e.g. relationship to an overarching framework;
- (f) accumulation models based on CVs, work experience, time served;
- (g) aggregation rules for competences;
- (h) transfer arrangements model: using a specified code of practice for moving from one area to another, e.g. VAE (the French accreditation of experiential learning system).

3.7.5. Means of communication

The negotiations which form the heart of a ZMT are carried out at different levels in different settings:

- (a) collection of states;
- (b) individual states;
- (c) industrial sectors/professional bodies internationally;
- (d) industrial sectors/professional bodies nationally;
- (e) enterprises/VET providers internationally;
- (f) enterprises/VET providers nationally;
- (g) individual enterprises/VET providers;
- (h) individual worker/learners.

3.8. Exchange value

On 6 December 2003, in the bibliophile of *The Guardian* newspaper - a polemical comment column on the book trade - the anonymous 'EK' wrote of '... the strange disparities in the prices of (second-hand rare books) - on the web and elsewhere'. Seeing the very same book frequently offered for pennies and pounds, he asks, 'Isn't there a little book - one that tells the true value of everything? ... well ... there isn't ...' In credit frameworks, qualifications frameworks and transfer agreements, there is an analogous search for 'a little book that tells the true value of everything'. Can there ever be such a book on qualifications and work experience? Would its existence be enough (like the philosopher's stone) to enable everyone to understand the value of each and every qualification and thus how all qualifications relate one to another. The evidence is that current systems operate in a more complex manner than this. A single reference point is not enough to enable effective 'exchange value' of qualifications, or work experience, to be established. Here 'exchange value' is understood as the mutual value which the holder of the qualification asserts and the value that the gatekeeper (selector in education and employment, consumer, etc.) ascribes to a qualification or to specific work experience. The exchange value satisfies the selector that they should let the person onto a course or into employment, and satisfies a user of the person's services (e.g. in the case of a surgeon, dentist, gas fitter) that they are of a proven quality.

Two concepts are vital in understanding the way in which exchange value qualifications and experience operate; general exchange value and specific exchange value.

General exchange value relates to progression or access which is enabled by virtue of having qualifications or experience which denote a general level or broad area of achievement; there is no attempt to get a precise match between the achievements to date and the specific competences required for effective performance in the job or learning programme for which the person is applying. An example is a course requiring that the applicants have a degree in any subject; there is no specific subject which is required. The degree is taken as a signal that a person has reached a general level of education, or is a 'certain type of person'. It can be associated with ideas of 'potential'.

This contrasts with specific exchange value where there is an attempt to match with a degree of precision the achievements to date and the specific skills required for effective performance in the job or learning programme for which the person is applying. This is the case where a person must have the necessary mathematics and science qualifications to go on to a science-based technical education programme; they need a specific, current licence to practice in the specific trade or profession, etc.

Obviously these can be combined. Gaining access to a specific university degree programme might require some attainments possessing general exchange value (a level of general education as indicated by a bundle of qualifications at particular levels) and some attainments possessing specific exchange value (maths and English to a given level, and high attainment in the same subject as the subject to be studied).

Returning to the notion of the ‘little book on the true value of everything’, this manifests itself in national systems in the form of ‘approved lists of qualifications’.

These are held principally by the following institutions:

- (a) universities, particularly their admissions services, who have lists of domestic and national qualifications, giving those which will be accepted as entry qualifications and those which will not. Many of these lists started over 50 years ago as a result of foreign nationals applying for engineering and medicine in Northern European and US universities;
- (b) other training and education providers (schools, colleges, training providers) who have lists of qualifications relating to access to specific courses, with the aim of ensuring that they select people who are capable of success on each course;
- (c) professional bodies and chambers, who hold lists of those elements which they consider suitable or conditional for licensing and conveying designated professional status, which may have a public mandate to control or even regulate access;
- (d) employment agencies (engaged in national and international recruitment) who hold lists to enable them to headhunt, broker and search effectively. For example, European agencies who are recruiting nursing staff from South Africa, on behalf of health services in Northern European countries;
- (e) government ministries and agencies, which are responsible for approval of qualifications, maintaining lists of qualifications that attract public funding, etc.;
- (f) agencies encouraging transnational cooperation, who are committed to helping people to move from one economic area to another, or who are promoting education and training development.

Do these approved lists assume the same status of the ‘little book of the true value of everything’? No, since they are partial in several ways. First, there are many lists. These are held by different organisations that have different purposes. Second, the lists frequently refer to specific sectors, since professional bodies are concerned with licensing in a specific area. Third, the lists can vary in their focus; some are outcomes focused, others focus instead or additionally on approved learning programmes. Fourth, no list relates all qualifications to all others, so the ‘map of exchange value’ is incomplete and in some cases inconsistent. Two similar bodies - for example professional bodies for social care and for health care - or different universities, may place a different apparent value on the same qualification, or one may include qualifications which the other does not.

The registers held by professional bodies for professional licensing frequently relate to requirements laid down in law. They focus on specific credit, since they state precisely the qualifications which are admissible - with a concern for public and consumer protection - and by corollary, protection of the reputation of the profession. In some cases they protect the interests of the professions or trades (e.g. by reducing entry and thus maintaining or increasing wage levels and/or protecting certain segments of the labour market).

By contrast, national qualifications frameworks tend to construct relations of general credit between qualifications, i.e. a given level in a framework may contain a wide range of qualifications in contrasting subjects or occupational areas. For example, a range of qualifications can populate 'level 3' in a framework and be regarded as worthy as a level 3 qualification. Crucially, for both the more general credit of frameworks and the specific credit of professional bodies' licensing lists there are admission decisions: what criteria should a qualification meet to be allowed into the framework or onto a list?

But the lists and frameworks are nothing more. It is the control of the list, the very different ways in which different bodies run admissions to the lists, handle new and special cases and build up case law, which are crucial in explaining how these ZMT mechanisms operate, are maintained and stay credible.

Lists of approved qualifications have an interesting ontological status; they communicate and contain past decisions. Employers, workers and learners can access a list held by a body and see in it the previous agreements. If a person has a qualification which exists outside the list this is treated differently in different countries or by different sector bodies. They have different arrangements for dealing with new cases; people holding non-approved qualifications trying to enter sectors in some nations can have much greater difficulties than when entering other nations. Likewise, occupational bodies' responsibilities and scope are defined differently in different systems, leading to different boundaries and recognition disputes, depending on cultural and traditional value systems.

Finally, lists can themselves be highly informal, as with a 'list' held implicitly in the mind of an individual employer, who will search for certain types of people but exclude others. By contrast with the formal lists held by professional bodies - which are public, can be criticised, and have processes for considering new cases - these implicit lists may be adversely affected by (gender and ethnic) stereotyping, narrow conceptualisation of necessary skills, etc. At the same time, there are examples of employers being highly innovative in the implicit lists that they use for searching for labour, particularly in the context of skills shortages or skills gaps. Examples are senior managers in a company promoting rapidly young members of the company who display particular innovation and commitment or companies using automated production processes emphasising more IT and production control skills than the sector-specific skills when recruiting and offering rapid further training in job-specific production skills. Established lists or registers of trades and professions ⁽¹⁾ come under threat in times of rapid change of occupational requirements and increased decentralisation or individualisation of training opportunities. A new kind of transparency mechanism and/or zone of mutual trust seems to be necessary to ensure credibility and sustainability of such lists on the one hand and their openness towards new developments on the other.

⁽¹⁾ Such registers are always linked to some kind of regulated training provision or certain quality assurance mechanisms and are based on either implicit or explicit agreements of current and former generations of respective holders of skills.

4. Qualification frameworks

Frameworks of qualifications are becoming established in many countries, in Europe and beyond (OECD, 2003). Most of these cover mainstream initial education, some are based in occupational settings and others straddle both of these. Developing some kind of overarching framework of qualifications features in the Bologna process and is proposed by the European Commission in connection with the Lisbon goals and the Copenhagen process. In a research review (Dean and Watters, 2004) for the National qualifications authority for Ireland (NQAI) it is reported that the idea of some form of integrated framework of qualifications is gaining ground at European level and in an Irish presidency conference (NQAI, 2004) covering higher education and VET the notion of a unifying European reference framework for qualifications was strongly advocated (see conclusions of the Director General of DG Education and Culture, van der Pas, 2004, <http://Cedefop.communityzero.com/credittransfer>, and look for conclusions Dublin 080304).

4.1. Need for a qualifications framework in Europe

Research (OECD, 2003) shows that the drivers for change in nations introducing qualifications frameworks include the challenges of internationalisation and economic factors and agendas for social and technological development. Also underpinning the emergence of frameworks is the growing recognition of the way in which compartmentalisation of qualifications development can adversely affect transparency and mutual recognition, thus erecting barriers to mobility (in the labour market), access (to education and training), progression (in employment and education), and equity (pay systems, etc.). They are considered influential in various respects.

4.1.1. Access and participation

Frameworks can help address demographic skill supply problems. They can open up qualifications to wider sets of learners by making clear what qualifications are available and how they relate to progression routes, facilitating non-standard forms of access. People with recognisable skills can move into skill shortage areas more easily.

Frameworks can include elements that help to specify learning styles and assessment methods. These might encourage participation by reluctant learners or increase the options provided by teaching or training institutions.

Qualifications frameworks which include credit systems can reduce the time spent by learners relearning material to reach outcomes already achieved in other contexts.

4.1.2. Transfer of skills

A framework can act to ease the transportability of skills from one occupational area to another, thus enabling further skills development.

Frameworks can help provide clarity about knowledge, skills and competences that are needed by enterprises for employment. They can show how employment opportunities are evolving to meet needs and thus strike a balance between flexibility and sustainability, between skills supply and demand.

International comparability through qualifications frameworks facilitates and promotes mutual cooperation and understanding as well as mobility and exchange.

4.1.3. Targeting and transparency

Learning can be more easily focused on learning and skill needs if information embedded in qualifications frameworks is clear and generally accessible. Coherent and simple structures for qualifications frameworks can simplify complex arrangements. Frameworks can counter the complexity that arises when there is an intersection between localised (decentralised or sector-specific) qualifications systems.

4.1.4. Guidance and quality assurance

Guidance material for users is easier to develop and disseminate if it is based on a well-known structure such as a framework. Qualifications frameworks can also contribute to quality assurance arrangements, for example being used for accrediting non formal or self organised learning.

4.2. Qualifications frameworks development

While the policy underpinning qualifications frameworks and credits may share a more or less common set of goals, the frameworks themselves are emerging in very different forms. It is important to focus on the precise way in which frameworks are expressed, since this conditions people's conceptualisation of education and training, with the clear implication that any weakness in the representation of a system may lead to deficiencies in the framework as a policy instrument. Most obviously, if a qualification framework fails to provide enough levels to describe existing arrangements, it will lack both credibility and utility. Qualifications frameworks are most commonly expressed as two-dimensional grids, with the vertical axis in the form of levels, and the horizontal as different strands or different 'routes' through education and training, knowledge, skills or competences linked to certain job profiles or clusters of skills.

Through the study of existing national and international frameworks, we have identified the following dimensions of variation:

- (a) outcome based evaluation (explicit skill and/or learning outcomes) versus learning input (completion or content of programmes);
- (b) levels without descriptors (equating framework) versus levels based on descriptors (descriptor framework);
- (c) integrated (no separate tracks or lines) versus differentiated in terms of two or more tracks or lines;
- (d) whole qualification level versus unit/module level;
- (e) large number of levels or sublevels, some of which may be vacant (this affects the capacity to ‘future proof’ specific frameworks and allows different types of qualifications to be accommodated in the same framework, one populating some levels and the other populating a different set) versus few levels, all of which are populated with clearly defined qualifications.

Of particular importance is the distinction between descriptor-based frameworks and those which have no descriptors for levels, known as equating frameworks. Both are ‘theory driven’ in that implicit theories can lie behind assigning levels to respective qualifications in an equating framework (e.g. this qualification is lower than that one because this one has a higher content of management skills) and matching qualifications to descriptors (e.g. increasing specialisation in technical skills characterises progression at the higher levels of the framework). Most descriptor-based systems do not flag with precision their underlying theoretical assumptions. Most frequently, they have an implicit, eclectic theoretical base, rather than reference to a single theoretical construct (such as Bloom’s taxonomy or Jaques’ work on occupational hierarchies or Dreyfus’ work on becoming an expert, see Annexes 4 and 5 and further below).

The focus in equating frameworks is not on whether a particular qualification meets a given description, but how it relates to other qualifications. Qualifications that might have little or nothing in common regarding aim, focus, scope and content can be set at the same level. By contrast, in a descriptor-based framework, qualifications can only be admitted to the same level as a result of meeting a required specification, which usually is more or less detailed.

4.2.1. The purpose of qualifications frameworks

One key problem that afflicts qualifications frameworks arises when they are used as tools for rationalisation. The essential problem is that complex, messy and diverse qualifications systems precede an agreement on qualifications frameworks. Then follows the question of the extent to which policy use of the framework seeks to accommodate existing arrangements (passive function) and the extent to which it seeks to change existing arrangements (active function). The passive function merely requires the administering bureaucracy to devote

effort to developing a system that allows accommodation of existing qualifications and existing arrangements, without changing the content of the qualifications. This typically requires a large number of levels and is most readily served by an equating framework, since this places less demand on any qualification in respect of its 'fit' into the framework. Even here, the relations between qualifications within such a framework can still remain contentious and incite a high degree of conflict and debate, e.g. where one body/organisation/nation feels that 'their' qualification has been wrongly allocated. The active function is quite different in its implications and requirements, requiring instruments of intervention, negotiation, control and maintenance.

Qualifications frameworks are commonly expressed as diagrams, and it is the diagram that is frequently referred to as 'the framework'. Such a diagram is an abstraction; a representation of real arrangements. Coles reports that three main forms of frameworks exist according to the stakeholder position: diagram, concept and quality assurance process. Students and their parents see it as a diagram, teachers and careers advisers see it as a concept and regulators and awarding bodies see it as a quality assurance process (QCA, 2001).

In the complexity of the labour market and admission to education and training, informal ZMTs can exist which treat qualifications in a way that confounds formal frameworks. Additionally, qualifications can exist in a given nation, have important functions, yet not be recognised in the framework. This often applies to employer-based certification and to international qualifications issued by companies such as the large IT transnationals. Also, the framework does not exist by virtue of being a diagram. It exists in two ways: by the arrangements which admit qualifications to the framework and in the extent to which it is used by people in conditioning the way they behave and the way they treat qualifications. Within this, the arrangements that admit qualifications to the framework are crucial. Who (or what machinery) makes the decision that qualification X is at level 3 and not level 2 or 4? If the framework is oriented towards change - e.g. making more similar (regarding skills, knowledge, etc.) the qualifications at level 3 which are currently unlike - who makes the decision on the extent of change required and who is able to control whether the changes have been sufficient?

4.2.2. Accommodation or prescription

The intention to accommodate existing qualification arrangements, coupled with the need to gain purchase (credibility) with existing stakeholders, suggests that a framework should be sensitive to existing differences between qualifications; this includes situations where those qualifications are competing or in conflict (for example, despite similar content, two qualifications from different sources are of different status and ranking in the framework). To adopt this more descriptive position is to try to accommodate these differences and to locate the qualifications in the framework before attempting any rationalisation and alignment. Adopting a more prescriptive position means refusing to admit qualifications until the contradictions have been resolved. A framework of this sort does not aim to be sensitive to

existing relationships, but aims to assert a new, desired order of relationships between the respective qualifications.

The accommodation strategy suggests a larger number of levels and more generic descriptors, or use of an equating framework with no descriptors at all. The prescription strategy suggests a smaller number of levels with more tightly specified descriptors. In practice, most (national and transnational) frameworks have been a mix of the two approaches. In some national contexts, the need to gain purchase with the existing system has given rise to frameworks that have accommodated existing arrangements, but only at the expense of compromising the change agenda, leading to a confused and contradictory framework.

Careful, deliberate management of the accommodation and prescription functions of any framework is crucial to the success and sustainability of any qualifications framework used as an instrument of policy and practice. Getting the framework established may be a priority, but if general acceptance of the framework is a prime objective, this can lead to decisions about the form and nature of the framework (number of levels, nature of descriptors) which can compromise intentions regarding medium and longer-term rationalisation, credibility and sustainability.

4.2.3. VET and higher education

Work on levels of qualifications and programmes (Adam, 2001) and on credit (see: Socrates information at <http://www.europa.eu.int/>) has advanced well in HE, at least regarding input (student workload) considerations. The collaboration of institutions to bring about the three cycles of HE understanding and the more recent Tuning⁽²⁾ project on curricula agreements in HE together with the three core elements of the ECTS system (course information, mutual agreement between institutions and use of ECTS systems) are model European ZMTs.

While frameworks for non-HE qualifications are gaining ground, credit transfer in VET is generally less developed. However, there are some good examples of schemes, such as credits for upper secondary schooling in Sweden, which include VET units; details are available at the (Swedish National reference point for Vocational Qualifications) SENRP website, www.senrp.se. There are also some well worked out plans for imminent implementation, such as credits in the SCQF in Scotland (see SCQF Handbook, 2003).

There is a considerable overlap between qualifications considered to be HE based and those that are essentially professional and linked to occupations and the workplace. There is also a considerable overlap regarding perceptions of 'levels' covered in each area; countries with inclusive qualifications frameworks have faced the issue of marrying qualifications from these two areas into one transparent framework. There are some good examples of attempts to do this within occupational sectors (in ICT for example) and there is evidence in the literature

⁽²⁾ See http://europa.eu.int/comm/education/policies/educ/tuning/tuning_en.html

that unitisation and internationalisation through trade and enterprises will encourage this marriage to take place sooner rather than later.

The barriers that exist preventing a common reference level credit system to develop are largely traditional in nature and based on the absence of collaboration through a ZMT. They are also institutional, in the sense that institutions are often gathered in separate clusters with competition between clusters rather than cooperation. In the discussion on reference levels that follows, the aim is to build an inclusive set of levels that will allow users to see a place for integrating HE based qualifications, VET qualifications and recognised (LLL) learning wherever it happens.

4.2.4. Existing international metaframeworks

In addition to the OECD and the EU, other international agencies are pursuing work related to qualifications frameworks; these include ILO (research project on frameworks), Unesco (ISCED) and the World Bank (VET qualifications systems). There are also several occupational classification systems that might be seen as frameworks, notably the national classification of economic activities (NACE) and its international counterpart ISIC. Three frameworks for qualifications stand out in international literature: the Bologna structures for HE, ISCED 97 (covering all education), and the 1985 European structure of training levels for VET (see Annex 3). These three are designed to be inclusive for qualifications in their field and can be said to be metaframeworks in the sense that national structures can be related to them. The need to review these frameworks and to adapt these to new requirements was fully recognised by the credit transfer technical workgroup. The Cedefop study on European structures of training levels published in 1999 and 2000 (in three volumes) supported this appreciation.

ISCED 97 (www.unesco.org/education/information/nfsunesco/doc/isced_1997.htm and OECD, 1999) is designed to embrace all learning. The international standard classification of education was designed by Unesco in the early 1970s and adopted in 1978 to serve as a means of gathering and presenting statistics on education in individual countries and internationally. It has its limitations as a qualifications framework since it is primarily a framework for quantifying education provision; even with this limited purpose it struggles to maintain a simple structure that will be inclusive of all educational developments. It is essentially an input framework that serves to benchmark countries by educational provision and enable comparison. However, it is used widely as a qualifications framework and it does have a set of levels with descriptors. Any development of reference levels should build on the international understanding that has developed around ISCED 97. This will facilitate continuity in many ways, not least in statistical analysis of educational trends. The structure of ISCED 97 is included in Annex 1.

Linked to ISCED is the international standard classification of occupations, ISCO 1988 (Elais and Birch, 1994). This four level classification is also likely to be important in defining common reference levels since in VET and in HE the field of occupations is a key

differentiating component. The relationship between ISCED and ISCO is provided in Annex 2.

The European Union's 1985 European structure of training levels for VET was published and used as references for the comparability exercise (European Council, 1985). It is interesting to look closely into the reasons for the publication of these levels. At the time the absence of a more formal comparability of training qualifications was considered to inhibit freedom of movement for workers and trainees within the EU. While recognising the diversity of training systems in the Member States the Commission thought it possible to draw up broad points of reference in the form of five training levels. These five levels were agreed as a reference allowing allocation of all kinds of training provision. It was expected to support essential and rapid progress towards comparability of vocational training qualifications for skilled workers, thus enabling them to make better use of their qualifications, in particular for the purposes of obtaining suitable employment in another Member State. The European levels are described in Annex 3. Contrary to the interpretation of this regulation in some Member States, these levels were never intended to be imposed top-down. The lessons to be learnt from this approach (which was not further pursued after the Maastricht Treaty became applicable and the subsidiarity principle was commonly agreed) are that any reference levels framework on the European or international level has clearly to be based on a voluntary participation of institutions and stakeholders in Member States. They may have an interest in reference levels for the purpose of increased cooperation and exchange with other countries or for the further development of their own internal provision of education and training.

Recently the EU has been working towards a level system for regulated professional qualifications. Four levels and associated guidance are proposed and are intended to facilitate recognition processes across member countries. For VET, the levels proposed cover most of the range of current qualifications.

For this study it should be emphasised that we propose the descriptors and framework below with no other purpose than to support the cooperation between VET providers (including higher education providers) with a view to establishing a credit transfer system⁽³⁾. If other purposes arise, for example in relation to the wider Lisbon goals and for agreeing an overarching European qualifications framework, then these descriptors will have to be discussed further, especially at the political level.

4.2.5. Theoretical considerations

Literature about framework development tends to be largely empirical in nature. Occupational sector frameworks are derived from the study of workplaces and jobs held. Most published research explores the policy and rationale for frameworks and then evaluates the effects of the framework on users, normally learners. Framework development has generally been part of a

⁽³⁾ See the mandate of the TWG on credit transfer.

rationalisation of current education and training provision to make the latter clearer, coherent and user-friendly; generally it is not driven by theory or principles originating outside the world of qualifications. A major exception is the development of the South African qualification framework that has a strong social reform agenda embedded within it. Theoretical work linked to qualifications frameworks springs from studies of business practices, the study of the professions, and, more indirectly cognitive science including assessment research.

We have reviewed literature from a range of sources to support the development of a robust set of reference levels. In this section we present a brief overview of the outcomes of this review process. Further details of the sources can be found in the annexes.

Elliott Jaques is a leading thinker in organisations and their effectiveness. Much of his work is about the management of labour and other economic aspects of businesses and public services. He developed an enduring concept of stratified systems theory, now better known as requisite organisation (Jaques, 1973). At the heart of requisite organisation is the simple notion that the demand, complexity, prior knowledge and importance of tasks lie in the time scale over which they are normally expected to take place. The theory goes on to explain that the natural structure of organisations, complex and simple, can be optimised by task analysis that is based on determining the time scale of the longest task a person is charged with carrying through. From the viewpoint of determining European reference levels it is possible to use Jaques' work to support an eight level framework of vocational learning within each of which it is possible to define the kind of task one would expect to find - the first stage covering general knowledge and basic skills acquisition. Jaques explains these tasks in detail but for simplicity we can adapt his work into a simplified table (see Annex 4). Jaques offers us a business model that might prove useful in defining level descriptors for particular types of qualifications or training outcomes. His work on types of thinking is also useful. It is based on four main categories as described in Annex 4.

More theoretical insight into hierarchies of performance is available from Hubert Dreyfus (Dreyfus, 1992; Dreyfus and Dreyfus, 1986), an American researcher who worked in information science. His insights into how people become expert was driven by the belief that computers will always fall short of human expert performance. His work has stood the test of time; he first published in 1972 and more recently he has been writing about why distance learning courses available on the Internet will not fully deliver the learning needs of professionals. Work on reference levels can be informed by Dreyfus' definition of a sequence of 'expertness'. While he offers a simple qualitative hierarchy in capability, other writers (e.g. Denning, 2002) have embellished it with descriptions of learning modes (see Annex 5) that may also be useful in our pursuit of European reference levels. It is interesting to note the use of a qualitative descriptor for levels. Notwithstanding the issue of the need for user-friendly terminology for European nations (numbers are simple to use) the key attribute of this qualitative approach is a blurring of the boundaries between one type of work and another. Approaches based on number give the illusion of a clear threshold and this can create some difficulties in making judgements at the boundaries of one level and another. As noted above

this can create the need for multiplicity of levels to allow easier matching of qualifications to levels.

Another well-researched area that may be useful for defining reference levels is language learning. The Council of Europe has published extensive accounts (Council of Europe, 2001) describing how a common reference framework for languages is based on such research. It is stated that a consensus has developed for a six level system after leading European linguists and pedagogical specialists said that there was a need to promote and facilitate cooperation among educational institutions throughout Europe and provide a basis for the mutual recognition of language qualifications. This consensus has been formed over 10 years of research by leaders in the field from the 41 states of the Council of Europe. (Raffe (2003) points out that the highly regarded, inclusive and well-grounded SCQF has taken 15 years to reach its current status.)

It would be easy to dismiss evidence from language framework development as empirical and based on consensus building. However the fundamental structure of the language reference levels has been well researched and the literature linked to linguistics, pedagogy, assessment and other fields are fully referenced.

One of the aims of the language framework is to aid comparisons between different systems of qualifications. For this purpose a scheme of common reference levels and descriptors has been developed. There are three main levels, each of which has two sublevels. It is interesting to note that there are general descriptors for these six sublevels. There is also a self-assessment grid for the student user and then more illustrative descriptors that provide a bank to be used by different users for different purposes. It is appreciated that no given situation will require reference to all descriptors; the user is required to decide which ones are relevant. The descriptors have been designed so that they are context free, i.e. applicable to all contexts. They are based on theory but designed to be user friendly. This system of sublevel descriptors can inspire the development of European reference levels. The extent to which the form of sublevel descriptors for European reference levels can be left to national stakeholders and professional bodies needs careful consideration.

One of the principal functions of the framework is to aid communication between the different partners in language teaching and learning processes regarding their aims and objectives, the methods used and results achieved; the language reference levels alone are not considered enough to fulfil this purpose. The framework, therefore, includes chapters on how the requirements described in the categories can be developed in learners, the role of tasks in language use and learning, plurilingual competence and its implications for the diversification of language teaching and policy and, importantly, the use of the descriptors in assessment. This kind of supporting material may be an important tool for establishing European reference levels.

This framework for language education offers recognition of existing qualifications and has the potential to shape future qualifications, i.e. it has both an active and a passive function. One of the main aims of the framework is to provide a basis to compare different

qualifications; this is clearly the passive function. This comparison is facilitated by several descriptors as discussed above. These descriptors however are also used to facilitate the active function in that they can be used to plan language learning and assessment.

4.2.6. Bilateral qualification reference systems

Across the world there are systems for translating the value of one qualification into a value or 'credit' for a course or job. Most of these systems are invisible and operate informally or are unpublished institution-based systems. Interskills (<http://www.interskills.info>) is an organisation claiming to have an overview of VET systems in 43 countries worldwide and offers a benchmarking service for linking foreign qualifications to those in a home country. The interesting aspect of this operation is that only four levels of 'occupational outcomes' are defined (see Annex 7). These correspond to the ISCO levels described in Annex 2 and also to the five European training levels (European Council, 1985).

Interskills currently operate effectively with these four levels and presumably this signals that these levels are the ones most frequently referenced by users (see Annex 7). There might be lessons here regarding priorities for developing European reference levels and a ZMT associated with them. However, it is also likely that lower level workers will be the least likely to use the service, as they might believe they have little to offer to match to foreign qualifications, and higher level workers will need little assistance from a service such as this as they already belong to a community of practice that will appreciate achievement in qualifications.

4.2.7. Recent national experience of developing qualifications frameworks

In recent years we have seen the relatively rapid development of national frameworks of qualifications that include some associated with VET. These countries have structured their frameworks according to existing internal ZMTs. Some have been pragmatic in the extreme (latterly England), others have used consensus building (Australia, Scotland) and others have extended this with a more fundamental belief in the reforming power of frameworks (Ireland, New Zealand, South Africa, Spain). While it is possible to count levels and scrutinise arguments for one number of levels over another, it is suggested that the nature of the level descriptors are likely to be more useful resource for setting European reference levels. The Irish Framework is the latest to emerge (NQAI, 2003) and uses descriptors that span the full range of qualifications over a ten level framework. The descriptors are divided into three sets under the headings knowledge, know how and competence. These are then subdivided further (see below) thus making eight fields in which levels are defined:

- (a) knowledge, divided into breadth and kind;
- (b) know how, divided into range and selectivity;
- (c) competence, divided into context, role, learning to learn and insight.

These fields are useful for defining the nature of European reference levels.

4.2.8. Typologies of knowledge, skills and competences

Work in this area is developing through a separate study, commissioned by Cedefop. At this point in a review of methods of forming reference systems it may be useful to take note of a wide range of typologies applicable to VET. The vast majority are occupational sector descriptions but these often employ categories of knowledge, skills and competences agreed, formally or informally, at the level of professional body or national government agency. Generic job profiles (see <http://www.career-space.com> and look up skills profiles to see a range of examples) of knowledge, skills and competences ought to be related clearly to reference levels since they are often used to define training, structure qualifications and allocate individual job profiles applicable in the respective industry or labour market segment.

Considerable effort is being made to establish profiles and frameworks to enable IT workers to gain appropriate skills and maintain an awareness of a rapidly changing field and work organisation (Mucke, 2001; Cedefop, 2002). In an example of a well-developed credit scheme for Baden Wurtemberg (Rocher and Sachs, 1999) there are three main domains that are linked to levels; these domains are further divided as shown in Annex 8. This work is particularly interesting for three reasons. First the categories and the sublevel criteria have been developed from local work practice, so giving the scheme bottom-up credibility. Second the reference scheme is designed to be active and inform on curricula. Finally, the scheme supports the assessment process, which is based on credits. The scheme draws heavily on the work of Dreyfus (see earlier).

Looking at a range of literature on sector profiles reveals a structure based on the following categories:

- (a) general education (covering full-time school education, qualifications gained at school, post school education, part-time study);
- (b) specialised training (covering professional experience and specialised skills);
- (c) experience (covering details of current job and other jobs held in the past);
- (d) technical expertise (covering a range of specific skills that are part of an occupation, in some countries these are defined, in others they are defined by the individual according to experience; specialisations also appear here);
- (e) general competences (these cover the skills, qualities and attributes that make it possible to work with others in teams and to apply technical skills productively);
- (f) personal characteristics (covering specific abilities like dexterity, eyesight, coping with heights);

- (g) social involvement (covering commitment to causes, social activities, interests outside work);
- (h) working arrangements (covering the kinds of conditions that the person works in such as working with children, dealing with high temperatures or use of toxic substances).

These categories indicate the range of VET characteristics that ought to be considered when typologies are defined.

4.2.9. A bottom-up approach to defining reference levels

The TWG on credit transfer for VET saw the dangers of a top-down imposition of a credit framework; uppermost in the minds of members was the core notion of a ZMT or a set of ZMTs developing around reference levels. We have assumed that the TWG has seen the development of reference levels as a means of supporting existing ZMTs where it judges them to be sound and useful, promoting fledgling ZMTs where it perceives development is needed, and stimulating new ZMTs where it recognises a gap in mutual qualification recognition.

5. Creating a new metaframework of qualifications levels in Europe

It would be relatively easy to define a set of reference levels using the main international reference systems described earlier. However, while this would build on ZMTs associated with these frameworks, it is likely that tensions would grow as a result of national differences of interpretation of descriptors and insensitivity to the nature of VET, particularly its breadth regarding learning diversity. Add to this the fact that the reference levels are required to sustain a credit transfer and accumulation function, and the need to look for more practical and theoretically grounded reference levels was clear. Rooting a reference level framework in its potential uses provides for a logical flow of ideas from purpose through to design considerations. The latter are the core of this research study. The TWG will be in a position to refine the range of uses proposed and the range of key stakeholders identified; it will also be able to adjust basic design features and explore the effect of these refinements on the proposed model for reference levels so that design is optimised for use.

What could a European reference level framework be used for? It is accepted that it will be a basis for ECVET and it will encompass the level framework for HE. There may be some wider uses of such a reference level framework. To be able to define purpose in some detail we need to look closely at more specific uses as well as general ones. A set of European reference levels may help to answer questions such as those that follow. These questions could come from learners, providers or social partners.

5.1. Questions from potential users

- (a) If people are going to move around Europe to work how will we facilitate transfer to institutions, providers and employers in different countries?
- (b) There are now 25 countries in the new European Union; their VET systems are all different. Is there a benchmark that can be used to understand and compare them?
- (c) I want to set some targets for upskilling the workforce in public transport industries. What international benchmarks are available for me?
- (d) I want to develop an advice pack for people wanting to work or study in a different country. What descriptors can I use to describe VET systems?
- (e) I run a big company and want to pitch a new training programme at a specific level and get people from different countries to participate in it. How do I pitch it right?
- (f) This applicant has been trained in another country. What level is his training compared to this country?
- (g) How many units of credit should I give to this type and length of training and experience in another country?

- (h) This professional body recognises some qualifications and training in other countries; we would like to have the confidence to recognise more. How can we work with professional bodies in other countries to be sure that qualifications and training are of the right kind and quality?
- (i) I'm designing a course and I want to pitch it so that it gains maximum recognition in other countries. How do I do this?
- (j) I have a qualification and I want to work in another country. Is it going to be useful to me?
- (k) I have some units of qualifications and I want to study for full recognition in another country. Will they count?
- (l) I have some experience from work in another country and I want to get it credited so that I can get onto a course or be accepted for employment. Will I get credit for my work?
- (m) I have skills in my trade and I want to broaden my general education. How can I find out if my skills are worth credit for a university course?
- (n) I want to recruit people for a vacant job and I have some applicants with foreign qualifications. Where can I get help?
- (o) Does an electrical installation expert in that country do the same things as one in this country?
- (p) How do I compare this young woman (from another country), who is applying for her first job, to an applicant from this country?
- (q) We have a national system of occupational qualifications and units. How do they compare to qualifications and/or units in other countries?

By considering questions such as these it is possible to build, bottom-up, some foundations for reference levels. The next stage is to condense the list into a series of categories of different purposes. Using the questions above it is possible to propose that the main purposes of a European reference level framework are the following:

- (a) a means of understanding the system of providing knowledge, skills and competences in different VET systems across the wider European Union;
- (b) a way of developing a convergent trend in European VET systems so that barriers to movement of people, skills and enterprises are reduced;
- (c) the basis of developing ZMTs across country boundaries and possibly across sectors within a country;
- (d) a means of structuring sector activity so that it becomes coherent and integrated with work in other sectors;
- (e) the basis for equating qualifications, training and work experience across countries;
- (f) the basis for ECVET;

- (g) a means of linking VET and HE in a single qualifications framework;
- (h) supporting target setting and planning for the medium term;
- (i) facilitating cooperation between providers of VET in Europe;
- (j) providing a means of recognising progression in learning between and within levels.

The next stage in the development of European reference levels is to consider the key groups of people who will use them for one or more of these different purposes. The process of identifying these groups maintains a strong focus on the customer and begins the process of development of a ZMT built around reference levels and ECVET. Research has shown many times that development without these stakeholders is likely to be limited, protracted in time and heavily focused on overcoming issues and differing interests (Sellin, 2002; Coles, 2004).

Our users are likely to be:

- (a) European policy-makers;
- (b) national policy-makers (in ministries, in government organisations and major independent players);
- (c) regional policy-makers;
- (d) universities and other HE institutions;
- (e) professional bodies (sectors and trade unions);
- (f) analysts (for example labour market researchers);
- (g) employers;
- (h) training providers, VET managers, designers and recruiters;
- (i) applicants for courses and jobs in another country.

5.2. The specific nature of a reference level framework

Up to this point we have considered existing frameworks, potential uses of a new framework, definition of purposes and identification of key groups. At this stage it is crucial to note that the European reference levels need to do more than help to locate qualifications and evidence of training and prior experience at particular levels. The framework also needs to facilitate the allocation of credit and allow its transfer to other systems of recognising achievement. The major difference of this additional purpose is that the input material - the material containing information about achievement or experience in one country - could be less substantial than a whole qualification or period of training. It could be at the level of module or unit of training, level of assessment or short period of experience. This smaller unit of evidence to be linked to reference levels may make demands on the descriptors of reference levels. They may require:

- (a) more detailed description of VET related achievement;

- (b) a wider range of dimensions to which the achievement can be linked to a particular level;
- (c) an overarching statement about minimum acceptable volumes of learning, achievement and experience;
- (d) some evidence about the broader programme or experience of which the evidence is only part;
- (e) allowance for the process of accumulation of credit.

Units of credit (partial qualification) also build into full qualifications and European reference levels will need to be consistent in the way they allow matching of levels of both partial and full qualifications. For example, it may be the case that the value of a free standing unit may be perceived to be greater than its natural proportion of the whole qualification of which it is part. There may also be issues associated with allocating credit to core units and supplementary or additional units. Rules of combination of units may be required. Many of these credit-related issues, however, fall outside the remit of this study.

A second feature of any European reference levels framework that requires clarification is the extent to which it will be expected to be formative on qualification development. In many countries with a published qualification framework the key purpose of the framework is to make the qualification system transparent and to make explicit the links between qualifications and defined progression routes (SCQF, 2003 and South African qualifications framework, details at <http://saqa.org.za>). In making the qualifications system transparent to users it is sometimes inevitable that pressure is put on some existing qualifications to adapt to the environment of a new framework (see details at <http://www.nqai.ie> and <http://www.qca.org.uk>). In some cases new qualifications are developed from framework requirements (see <http://www.nzqa.govt.nz>). In the case of European reference levels there is a clear argument for building on the basis of existing ZMTs and therefore matching, as well as possible, existing expectations of ZMTs. However there is unlikely to be a perfect 'fit' to existing ZMTs in every country and sector and some adaptation is inevitable. There is also the pressure to look to the future and build reference levels that reflect the skill requirements of a future European labour market. While this is unlikely to require shifts in the range of levels it is likely to create pressure to distinguish between levels of qualifications where training requirements and working practices are changing fast, for example in ICT based sectors.

A declared purpose of ECVET is to facilitate cooperation between providers, teachers and learners beyond national frontiers (see TWG definition of the functions of ECVET at <http://communities.trainingvillage.gr/credittransfer?go=z988442>). Cooperation will depend on common understandings of levels and what they mean. It will also mean that there is some scope for negotiation and discussion of differences. This indicates that any level descriptor for European reference levels will need to be defined to encourage reflection on the way national qualifications or training structures match these descriptors. A conclusion might be that European reference levels must at once recognise existing practice and make potential users feel comfortable with the defined levels but, at the same time, they must create a mechanism which takes into account the need for change and development in line with clear and future-oriented European qualifications and training structures.

All of the elements of discussion of the nature of ZMTs and of existing frameworks can now be brought to bear on the possible reference framework options.

5.3. Possible structures

Having identified purposes, stakeholders and some key issues that reference levels need to address, we can look more closely at the options for defining the reference level framework. The reference level framework should have certain qualities if it is to fulfil the purposes. For example, it should:

- (a) be easily understood regarding what it is, what it can do and what it cannot do;
- (b) enable an increasing development of ZMTs so that it builds on current practice and takes account of the ways reference level frameworks become popular and influential;
- (c) be consistent with existing widely used frameworks;
- (d) cover all aspects of VET, i.e. training provision, qualifications development, assessment of work-based knowledge and skills, certification;
- (e) be especially conducive to linking a unit of assessment with a level;
- (f) be capable of offering a meaningful reference point within different VET contexts such as occupational fields;
- (g) recognise social reality regarding labour market conditions and wider social goals and be capable of evolution to meet pressures for change;
- (h) include HE frameworks and levels;
- (i) facilitate sector involvement.

There are also structures that cannot be ignored in the definition of European reference levels:

- (a) there is a common framework with ISCED that has already established a level system for equating initial education systems;
- (b) there is an accepted qualifications structure for qualifications awarded in HE;
- (c) NACE (ISIC) has become a foundation for sector definition;
- (d) the emerging EU level system for recognising regulated professional qualifications;

Any system must be allowed to accommodate input models of VET and models based on assessed outputs. It also needs to be flexible in allowing a European credit system to develop.

5.3.1. Steps towards a practical design of European reference levels

There seems little doubt that the European framework needs to incorporate the qualities of a descriptor-based framework rather than that of an equating framework. The reasons for this decision are straightforward: European reference levels must always be seen as inclusive to all users and must allow for the broadest range of learning to gain recognition. This is not to say that there should be no formative influence to align as might be required by an equating framework. A key point in this report, building on our study of ZMTs, is that any allocation of qualifications to reference levels should be left to national governments. We will return to this issue later.

Having decided that descriptors are necessary, the next decision is about the degree of elaboration of these descriptors. We sense from the literature a constant need to elaborate descriptors and to allow for sub-divisions within levels to accommodate and regularly update a wide range of qualifications. Commentators point consistently to the limitations of specific descriptors. Descriptors seem to be both ‘obviously necessary’ and, at the same time, always vulnerable to well-grounded critique which points out empirical limitations and problematic theoretical assumptions (not least where single-paragraph descriptors rely on minor linguistic or terminological variation to produce descriptors at different levels).

One way of treating the limitations of descriptor-based frameworks is simply to devise a credible set of descriptors and to ignore the subsequent critique, basing any refinement of the framework on the effects which the framework is having in respect of ZMTs, selection and access, and qualifications development and supply. ISCED 97 and the European five level framework adopt this position, although the former has undergone partial transformation through including certain kinds of sublevels with A, B and C specifications (see Annex 1).

One way in which the respective benefits of equating and descriptor-based frameworks might be combined to yield a powerful ‘metaframework’ is by developing a framework with scope for a large number of discrete dimensions of demand or achievement. Any given qualification might be admitted on the basis of ‘best fit’ to the full set of descriptors, rather than having to meet all the requirements of the descriptors. There might be areas in a level which one qualification might meet and another might not, despite sharing four or five in common. This meets the criterion of sensitivity (allowing variation in qualifications to be accommodated) while meeting the criteria of showing relations (relational descriptive power) and indicating in what ways a qualification might need to be developed to be a closer match (promotion of change and coherence). Such a framework allows vacant ‘cells’ in the framework. It also allows an important development, the reconciliation of a focus on qualifications (large units) and modules/credits (small units). This allows a person holding a qualification meeting five necessary elements at a given level to focus on the precise elements, for instance in the form of a learning module, to allow them to gain the other element and so meet all six elements of the framework at that level (see above).

We strongly recommend this approach for the reasons given above and because of a belief that a powerful ZMT could be established around a framework that has a simplicity of appearance but a capacity to accommodate at a fairly sophisticated level of detail.

5.3.2. The proposed design: a matrix approach

It seems clear that the development of any overarching European model must be flexible enough to encompass national, regional and sector variations. A European qualifications framework would amount to an agreement about a common structure or architecture within which all different current and future qualifications could be located. It would not, or need not, entail the creation of identical qualifications regarding specific standards, delivery, content or approach, although the development of shared descriptors or a shared understanding of ‘generic’ qualifications, such as first degrees in higher education, does bring advantages to recognition and comparability. Rather, it would provide a context within which a wide variety of qualifications could be located. It would mean the establishment of a European framework that would accommodate national qualifications frameworks, in turn reflecting different national priorities and cultures and possibly more detailed specifications.

The point of a reference level system is to make it possible to gauge the relationship between one area of vocational learning and another. Until VET credits are developed, the language we will use will probably be of levels. The challenge we have is to describe levels in a way that allows every potential user to feel they understand the scope and limitations of the level and, when they apply this understanding to specific learning, that they feel confident in the way it matches or mismatches the respective level.

One idea, formulated in several reports, papers and presentations is to describe a level in terms of several qualitative dimensions. Thus we have a two dimensional grid: a vertical dimension of level or demand and a horizontal dimension containing classifications with various characteristics regarding knowledge, skills and competences. This horizontal dimension will facilitate recognition of the main areas of VET learning. The area of this grid constitutes a ZMT since every cell in the grid represents an area of value and trust. We propose developing a descriptor-based framework with an associated handbook that covers the qualitative dimensions. Users could look to the descriptor to gain a general understanding of the level and then use the manual to learn about the different ways qualifications and training programmes are structured and described. We will now move on to consider detailed aspects of a matrix that incorporates descriptors and horizontal qualitative dimensions.

5.3.3. The vertical dimension

The levels in an overarching European framework for qualifications needs to accommodate comfortably the levels included in as many of the national and sector frameworks as possible. The simple solution to determining several levels for the European framework is to scan the existing national and sector frameworks and seek out the framework with the largest number of levels. We can use the Scottish experience and evaluation projects such as the Cedefop review of training levels from 1985 ⁽⁴⁾ to support the use of a high number of levels. These

⁽⁴⁾ See Cedefop, *European structures of qualification levels*. Luxembourg: Cedefop, 2001, Vol. I, II and III.

examples suggest use of high numbers of levels holds considerable advantages (helping with accommodation and the alignment of complex relations), and allows for the notion that some levels can be vacant.

Another consideration in the design of the European framework is the need for simplicity which suggests a small number of levels. Stakeholders need to have a concept of a 'European level' that is easily equated to a level in the local system they know well. In other words a European level needs to be a concept of learning achievement, in VET and through LLL, that a particular local level indicates to the stakeholder. As the number of levels increases, this conceptualisation of specific level is harder to maintain and instead the whole framework becomes the main way of thinking about VET levels. However, there is evidence that stakeholders are usually concerned about one particular region (e.g. a narrow range of levels or the cells that accommodate a specific set of qualifications) of a framework and do not concern themselves with the whole. The ideal solution is for stakeholders to see one level with confidence and clarity and also see the meaning of all the levels in the framework. One way of accommodating the need for a small number of discrete levels and the benefits of a large number is through the voluntary use of sublevels. Examples of sublevel systems are given in Annexes 6 and 8.

Sublevels can take two main forms. First, they can symbolise a progression in performance within a level and so are essentially hierarchical (e.g. novice, competent, expert). Alternatively, they can be categorical sublevels that show the different nature of qualification that could be part of a main level (e.g. general education qualification, VET qualification, experience of work). Both of these options are attractive for European reference levels; the progression model offers the prospect of accommodating different national structures while the categoric model keeps the overall reference level model simple by accommodating different types of VET achievement. On balance, the progression model offers more since the categorically different features of VET achievement can be accommodated in the horizontal component of a framework (see below).

We propose that three sublevels may be used for each main level. They may be tentatively defined as follows:

- (a) partial, indicating that the qualification or completed training programme or job experience, while predominantly matching the specific descriptors, has some significant gaps that need to be acknowledged.
- (b) modal, indicating that there is a good match of the qualification or completed training programme or job experience to specific descriptors.
- (c) exceeds, indicating that there is a complete match of the qualification or completed training programme or job experience to the requirements of the specific descriptors at this level and there are some additional elements that exceed the requirements of the descriptors at this level.

These sublevel terms represent subdivisions of the overall or 'parent' level. A qualification needs to be matched against the parent level that offers 'best fit'; the match may not be

perfect. The sublevels offer the opportunity to make the fit better by locating a qualification at ‘partial’ when it seems to lack something in relation to the parent or at ‘exceeds’ when it is slightly better than the parent descriptor but not at all at the next parent level up the framework.

A language of discrete numbered datum points is internationally accepted. Many frameworks have a numbered dimension where each level is described as discrete from its neighbouring levels. We propose that the TWG continues to use numbered levels. However there are advantages in also using a qualitative description for each level. First, names can be adapted from existing structures in countries and sectors to show the relationship between the national framework and the European reference levels; the naming of levels should be left entirely to users as there is no immediate advantage in having a single European naming system for levels, translated into different languages. Second, the use of names may help to produce a concept of opportunities for progression and continuous transition from one main level to the next, so aiding the lifelong learning objective. The levels in the European language framework are defined with words that broadly describe the characteristics of the level. Naming levels could offer a third advantage: names for levels could intentionally be made to not overlap with existing terms in a national framework if a policy of reform and change is desired. It should be noted that names for levels could also offer countries and sectors a chance to consolidate names for levels (and, if applicable, sublevels) into one agreed form. In some countries there is a multiplicity of terms for different levels or sublevels.

The following vertical components for reference levels are thus proposed:

Table 4: Vertical components of reference levels

European reference level	Name (determined nationally, suggested notation that might be appropriate in the United Kingdom)	Sublevel if applicable (coverage) (determined nationally, suggested notation for the United Kingdom)
1	General	
2	Entry	Partial
		Modal
		Exceeds
3	Foundation	Partial
		Modal
		Exceeds
4	Technician	Partial
		Modal
		Exceeds
5	Expert technician	Partial
		Modal
		Exceeds
6	Expert	Partial
		Modal
		Exceeds
7	Master	Partial
		Modal
		Exceeds
8	Specialist	Partial

		Modal
--	--	-------

5.3.4. Defining the characteristics of levels

There is considerable research evidence in this field. It is suggested that broad criteria be applied to make descriptors for one level (or sublevel) distinct from others. Descriptors should be:

- (a) referenced clearly to the levels above and below, where appropriate, only regarding progression. In all other ways each level descriptor should be independent;
- (b) stated on positive terms and avoid all statements about what is not admissible in qualifications at the level;
- (c) concrete and definite in nature and avoid use of words such as narrow and good, or cross references such as narrower, broader or appropriate;
- (d) jargon free and transparent for the non-expert reader;
- (e) as brief as possible to facilitate clarity of the concept of the level.

Further work needs to be carried out to produce a widely accepted and robust set of descriptors for European levels of education and training. However the research carried out on existing frameworks suggests that a distinction between general level descriptors and specific level descriptors is useful. General level descriptors are broad statements intended to convey a notion of level. They accompany the number (and possibly the name) and do not make reference to any existing qualification or specific standard of VET learning. Specific descriptors bring the vertical and horizontal components together by illustrating a more detailed description of the requirements of a qualification to match a level (or sublevel). We will return to specific descriptors when we discuss the horizontal dimension. The level of specificity included in descriptors is an important issue. If the specification is detailed and highly specific, descriptors become threatening to users and they tend to act in a way that excludes matching and possibly reduces opportunities for a wide ZMT to develop. When written in a broad way they tend to be read as inclusive therefore allowing accommodation of existing structures and consequently increasing the chances of developing a wide ZMT. European levels must be inclusive and the development of a wide ZMT is the goal, therefore the general descriptors must be written in a way that invites accommodation of national systems.

The following table provides a framework with a set of general descriptors. It is based on the evidence summarised above. The TWG are invited to consider the likely effectiveness of the descriptors as the backbone of an inclusive European credit framework covering VET and higher education, distinguishing qualifications as the key transition points for mobility of learners and according to the distinctions present in national systems.

Table 5: Draft general descriptors for European reference levels

European reference level	Draft general descriptor
1	Learning normally acquired during compulsory education and considered as contributing to a general knowledge and development of basic skills. Learning is not usually contextualised in work situations.
2	Completion of compulsory education which includes an induction to work. Basic knowledge of work can be acquired at an educational establishment, in an out-of-school training programme, or in an enterprise. Generally it is not occupation-specific. The range of knowledge, skills and competences involved is limited. Qualification at this level indicates a person can perform basic tasks and exercise skills in a controlled environment. All action appears to be governed by rules defining allowable routines and strategies.
3	Completion of a basic vocational training qualification introducing the idea of job competence. It is normally considered part of upper secondary education. This qualification shows a person has basic skills suitable for many job functions and the capacity to carry out tasks under direction. Most action carried out by people at this level of qualification is deliberate repetitive application of knowledge and skills.
4	Qualification at this level normally includes upper secondary education and a work based training programme in an alternance or apprenticeship scheme and involves developing knowledge linked to a specific occupational field. People qualified at this level are able to work independently on tasks and have the capacity to apply specialist knowledge, skills and competences. They will have extensive experience and practice in both common and exceptional situations and be able to solve problems independently using this experience.
5	Completion of a main vocational training qualification such as apprenticeship or further education and training. This form of qualification involves significant theoretical knowledge and technical work that can be performed independently and entail supervisory and coordination duties. Qualification at this level indicates a person can deal with complex situations and their performance can be a benchmark for others. They will have considerable experience and practice across a wide range of work situations. This qualification level often bridges secondary and tertiary education and training.
6	Qualification at this level covers a high level of theoretical and practical knowledge, skill and competence, entailing mastery of the scientific basis of an occupation. Qualification at this level means a person can deal comfortably with complex situations, is generally autonomous and can assume design, management and administrative responsibilities. They are equivalent to the first Bologna cycle of higher education.
7	These qualifications recognise specialist theoretical and practical learning that is required for work as (senior) professionals and managers. People qualified at this level will have a breadth and depth of knowledge and be able to demonstrate high levels of specialist competence in an area. They will operate independently and supervise and train others where they can be inspiring. These qualifications are equivalent to the second Bologna cycle of higher education.
8	These qualifications recognise people as a leading expert in a highly specialised field dealing with complex situations and having the capacity for long-range strategic and scientific thinking and action. Such experts develop new and creative approaches that extend or redefine existing knowledge or professional practice and often teach others to be experts and masters. The qualifications are equivalent to the third Bologna cycle of higher education.

Having defined these eight levels, it should be possible to find a level for every major qualification in every country and in every sector. It should also be possible to identify a level for a period of well-defined experience of work. It is important to define the horizontal component of the proposed matrix approach so that all kinds of VET learning and achievement can be allocated to a level or, if applicable, a sublevel.

5.3.5. The horizontal dimension

The horizontal or qualitative dimension is the key area of responsiveness that will add specificity to the levels. It has to include the qualitative descriptors that will allow a person making use of the framework to identify where any kind of recognised VET learning is appropriately located. It will govern accessibility, flexibility and the notions of benchmarks and quality assurance. The further definition of the horizontal dimension is an important task for the TWG.

It is important to anticipate what kind of qualification users of the reference framework will want to find a level for. It is suggested, for the first phase, that only two qualitatively different dimensions are used:

- (i) full qualification, partial qualification and units of assessment. This includes successful completion of a training programme or a distinct part of it;
- (ii) experience of work in an occupation covering a specified minimum period of notional time.

These two dimensions can be extended or sub-divided at a later stage of reference level development. Three criteria should be developed to signal to users the nature of qualification that is expected to be matched to reference levels. These are broadly defined as follows:

- it is described in terms of learning outcomes;
- it is capable of being assessed;
- it is quality assured.

These dimensions are intended to be national system related, within each dimension we might anticipate elements that relate to the building blocks of these national systems. For example, for a training programme we might expect a specification to include details of knowledge and understanding to be learned, skills to be practised, competences to be acquired. Within the experience dimension we might expect to see a job profile, details of level of autonomy required and responsibility for the work of others.

These kinds of detailed specifications of knowledge, skills and competences have been researched as part of this project and are the subject of a forthcoming Cedefop research contract. In the next phase of this work each dimension could be defined in terms of such specifications.

It is now possible to create a matrix with the two qualitative dimensions as columns in the reference level framework. In each column of the horizontal component it should be possible

to produce a specific descriptor for each level to correspond with and extend the general descriptor for each level. It is proposed that the specific descriptors should include, as a minimum, the following four components at each level or sublevel:

- (a) a description of the knowledge, skills and competences normally included in qualifications, e.g. outcomes of training programmes and corresponding generic job profiles;
- (b) an indication of significant contextual features of qualifications and work such as complexity of sphere of application and level of initiative/creativity/problem-solving required, the level of independence in learning (managing learning, autonomy), roles in relation to others (managing others and teamwork skills);
- (c) competences generally required by the qualification, training or work;
- (d) the quality assurance processes normally associated with assessing and verifying the qualification, training and work.

The fourth point is different from the first three which are associated with outcome of qualification, training or work. The fourth is included because it signals that the qualifications to be matched should also have associated quality assurance processes. Without such a signal it might be difficult to develop a ZMT because users might sense that using the reference levels to equate qualifications across countries might carry too much risk. The quality assurance specification should leave scope for individual countries to define the detail; it should be specified in broad detail in relation to the reference level framework. A model of the proposed reference level framework follows on the next page (Table 6).

Table 6 Model of the proposed reference level framework

European reference level (¹)	General descriptor	Dimension A qualification	Dimension B experience of work
1	Learning normally acquired during compulsory education and considered as contributing to a general knowledge and development of basic skills. Learning is not usually contextualised in work situations.		
2	Completion of compulsory education which includes an induction to work. Basic knowledge of work can be acquired at an educational establishment, in an out-of-school training programme, or in an enterprise. Generally it is not occupation-specific. The range of knowledge, skills and competences involved is limited. Qualification at this level indicates a person can perform basic tasks and exercise skills in a controlled environment. All action appears to be governed by rules defining allowable routines and strategies.		
3	Completion of a basic vocational training qualification introducing the idea of job competence. It is normally considered part of upper secondary education. This qualification shows a person has basic skills suitable for many job functions and the capacity to carry out tasks under direction. Most action of people at this level of qualification is deliberate repetitive application of knowledge and skills.		

4	Qualification at this level normally includes upper secondary education and a work based training programme in an alternance or apprenticeship scheme and involves developing knowledge linked to a specific occupational field. People qualified at this level are able to work independently on tasks and have the capacity to apply specialist knowledge, skills and competences. They will have extensive experience and practice in both common and exceptional situations and be able to solve problems independently using this experience.		
5	Completion of a main vocational training qualification such as apprenticeship or further education and training. This form of qualification involves significant theoretical knowledge and involves mainly technical work that can be performed independently and entail supervisory and coordination duties. Qualification at this level indicates a person can deal with complex situations and their performance can be a benchmark for others. They will have considerable experience and practice across a wide range of work situations.		
6	Qualification at this level covers a high level of theoretical and practical knowledge, skill and competence, entailing a mastery of the scientific basis of an occupation. It means a person can deal comfortably with complex situations, is generally autonomous and can assume design, management and administrative responsibilities. Such qualification is equivalent to the first Bologna cycle of higher education.		
7	These qualifications recognise specialist theoretical and practical learning that is required for work as (senior) professionals and managers. People qualified at this level will have a wide breadth and depth of knowledge and be able to demonstrate high levels of specialist competence in an area. They will operate independently and supervise and train others where they can be inspiring. These qualifications are equivalent to the second Bologna cycle of higher education.		
8	These qualifications recognise people as a leading expert in a highly specialised field dealing with complex situations and having the capacity for long-range strategic and scientific thinking and action. Such experts develop new and creative approaches that extend or redefine existing knowledge or professional practice and often teach others to be experts and masters. The qualifications are equivalent to the third Bologna cycle of higher education.		

⁽¹⁾ Training providers or bodies responsible for accreditation/assessment may subdivide a level into sublevels, e.g. partial, modal or exceeds.

6. Implementing the reference levels

6.1. Guidance on the reference level framework

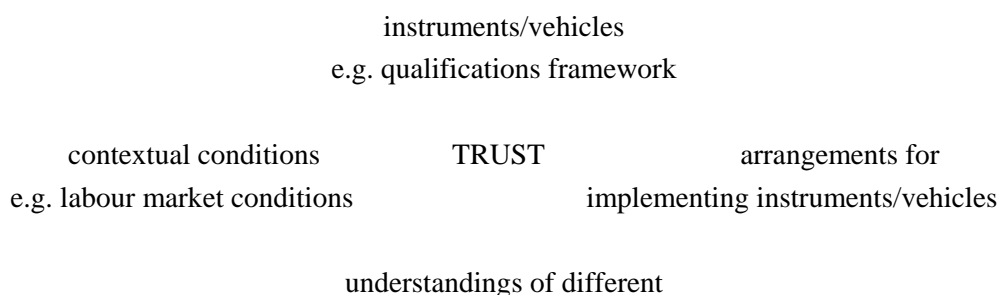
The new reference levels have to be at the centre of a new ZMT that enables stakeholders with different interests and perspectives to feel confident in matching local qualifications to those in another country. One tool that may support the development of the new ZMT is a handbook or guidance manual that helps with interpretation of European reference levels to local qualification structures. The ISCED 97 Framework provides such guidance for users as does the European language framework. Many national frameworks also are accompanied by guidance documents. The production of such a handbook could form part of consultation and development that might be structured in the following way:

- (a) step 1: European reference levels proposed;
- (b) step 2: countries and professional bodies respond to the proposed levels and draft general descriptors and are invited to comment on how they relate to their existing frameworks;
- (c) step 3: commentary from countries is used to refine levels and descriptors and create outline guidance as discussion documents;
- (d) step 4: agreed European reference levels and descriptors launched;
- (e) step 5: countries and professional bodies invited to produce detailed guidance on the match between European reference levels and their own local frameworks;
- (f) step 6: international guidance issued covering of the reference level and descriptor interpretation in different national settings.

This process is designed to demonstrate that the reference levels are an international reference document aiding European mobility of learners and people. Detailed interpretation and quality assurance is a matter for national bodies.

Arrangements for implementation need to include instruments that are linked to each part of the diagram included in section three and reproduced below. This is necessary if trust is to develop in the way that discussions in the TWG have indicated.

Figure 7: Zones of mutual trust



parties within the system

As ECVET develops, the guidance can be extended to explain such things as terminology used in the ECVET system, credit values, rules of combination of units and assessment criteria.

One specific issue is outstanding from the point of view of the reference levels for VET in Europe. This is the changing nature of the participants likely to engage with any reference framework. It is clear that bilateral arrangements are easiest to establish where there is a will for this to happen (GRE/ITA for recognition of qualifications, GER/AUS arrangements for mobility in apprenticeship). The EU15 is a very different scale of operation and even more so the EU25, offering 600 possible combinations of bilateral arrangements in these EU25 systems. ZMTs are therefore difficult to arrange and develop but crucial if a European labour market is to function. The strategic issue is whether it is better to start broad and to allow opt-in or to start specific with a series of bilateral arrangements and allow generalisation (and trust) to develop?

6.2. Quality assurance issues

The research has not focused on quality assurance issues, though we do refer to the discussions and decisions of the technical working group on quality in VET that is developing principles for QA systems. A more in-depth look at the outcomes is required during the next stage of the development of ECVET. Huge logistical benefit will arise if the reference levels and the consequential ECVET credit framework develop from trust situations. Once a soundly argued case for reference levels and ECVET has been accepted, evidence of framework development suggests the focus will shift to quality assurance mechanisms. For this reason we have argued for a specific place for QA references in the specific level (and sublevel) descriptors (see earlier). We believe that the place for more specific level-related work on quality assurance is best left to national and sector experts. However the TWG, the technical working group on quality, as well as Bologna-related work for HE will need to provide guidance on standards of QA expected of qualification developers and evaluators.

Through exploring existing ZMTs and levels frameworks we can outline the following points.

The mere existence of a levels framework is insufficient; even with the existence of (sectoral/national/transnational) frameworks and listings of recognised qualifications, decisions still need to be taken, by someone or some body, as to whether any given qualification or body of experience matches the stated requirements (e.g. of a specific level in the framework). Assigning qualifications, experience, etc. to levels in the framework is a necessary activity; the precise form of the administrative apparatus for doing this needs to be established. Is it to be sectorally-based? Are sector-based bilateral arrangements adequate? The process may require national mechanisms and their networking at European level to build ZMTs more permanently and in a sustainable way.

Criteria need to be established (by mutual consent between responsible bodies in different nations, countries, or by regulation?) regarding the forms of assessment which are considered both legitimate (of suitable validity) and administered effectively (of suitable reliability) in relation to specific outcomes.

Decisions also need to be taken in respect of the forms of (and mechanisms for) public accountability and openness in arrangements for assigning qualifications to levels. In formal arrangements these will relate to licence to practise (backed by legislation); they might be imposed on highly informal ZMTs which have arisen through short-term labour requirements (skills shortages/gaps).

6.3. Problems with existing ZMTs

The establishment of a ZMT for VET and qualification will require some sort of definition of volume of training or learning. In HE, quantification of workload was the prime variable and agreements were struck because a means of quantification (a fairly rough one) was defined and promoted. Incentives to participate drew on this definition. It will be harder to define workload - or its equivalent - for VET.

Our review of literature on ECTS and similar systems suggests that a VET credit system may be adversely affected by a number of problems.

First is the desire of industry, national governments, etc. to reduce bureaucracy but also to have sufficient formal assurances regarding quality of assessment. There is an associated problem that formal administrative systems often are required to support ZMTs - such as ECTS - but that these systems can become static and fixed, and thus a limit on the development of ZMTs. Also, despite progressive aspirations, they can be linked with, and reproduce, existing forms of market organisation (Delisle and Ryan-Bacon, 2001; Sullivan, 2002).

Similarly, the way in which ZMTs have sprung up in specific occupations and arrangements have been put in place (e.g. bilateral agreement between Canada and France in respect of engineering) to facilitate recognition, tend to be occupationally-specific. This again places restrictions, limiting the arrangements to specific occupations or sub-occupations, when arrangements could operate across wider areas (Jeffries and Evetts, 2000).

The persistence of stereotypes regarding the superiority of certain forms of learning over others (traditionally expressed in the form of 'the academic/vocational divide') is a further problem. So is the association of certain groups with certain types of employment (e.g. functions in the care profession being associated particularly with females; functions in construction being associated with males, etc.) and of the kind of experiences which prepare people for specific roles (Clayton, 2000).

Finally there are the highly varied ways in which national context impinges on the existence and operation of ZMTs, regarding the state of development of the labour market, form of society; and state-labour market relations (regulation, etc.). There is also the relative dependence on formal assessment and certification and the relative predilection of national administrations to intervene and create bureaucracy (Di Francesco, 2004; Brown and Keep, 1999; Kivinen and Nurmi, 2003).

Literature also suggests assessment processes will be problematic. Assessment needs to be understood as more than a procedure; there are cultural differences in the way people in different countries perceive and react to assessment. This raises a set of key questions for the operation of ZMTs:

- (a) what are the rules in a ZMT? Is there a formal list that is given status by legislation (e.g. on license to practise)?
- (b) how open or closed are informal and formal lists; do they emphasise general credit or specific credit?
- (c) who decides on admitting a qualification to a list, or that a given qualification will give admission to employment or learning programmes?
- (d) who provides the evidence or undertakes the investigation of the worth of a qualification; in some countries, there are research units (such as the United Kingdom NARIC (national academic recognition information centre); which support this function?
- (e) even with the existence of (sectoral/national/transnational) frameworks and listings, decisions still need to be taken, by someone, as to whether any given qualifications or body of experience matches the stated requirements. What national arrangements should exist to deliver decisions on transnational frameworks?
- (f) what information exchange is there between organisations holding different lists? Do contradictions of status, worth, etc. exist where different sector bodies treat the same qualification(s) differently? In other words, do the institutional boundaries between bodies create inefficiencies and contradictions in the patterns of mutual trust in a labour market or education system?
- (g) what levels of accountability and openness are present in formal arrangements relating to licence to practise (backed by legislation) and, by contrast, in informal ZMTs which arise through short-term labour requirements (skills gaps/shortages)?

7. Further considerations for the TWG

Through its work in reviewing literature, examining policy and practice, and working with technical specialists, the project team has identified the following emerging issues as areas which would benefit from further research and development work, and from the attention of policy-makers.

7.1. Development of a technical manual for the proposed levels

The application in national systems of the proposed system requires consistent interpretation of the levels, clear examples of precedent, and a systematic approach to analysing qualifications/programmes in relation to the levels. The proposed new framework requires an accompanying technical manual, using an approach similar to the manual accompanying the ISCED framework. This is beyond the scope of the current project. The project team considers the development of such a manual to be essential for effective implementation, in national settings, of any revised arrangements.

7.2. Establishing links between levels and credit systems

Emerging credit systems in EU States are typically dependent on a framework of levels. The growing importance of credit (often associated with policy aspirations relating to opening of access to education and training, to increased recognition, to flexibility and to coherence) means that it is essential to explore and establish clearly the link between credit accumulation and the proposed revised levels.

7.3. Administrative mechanisms and tools to support revised levels

Any framework of levels and associated zones of mutual trust require supporting administrative arrangements, for example, relating to assignment of qualifications, etc. to levels, bilateral and multilateral discussions relating to labour market regulation and links to qualifications. Both national and EU administrations need to consider the policy of active intervention/support in relation to zones of mutual trust. This applies particularly to principle and precedent regarding when it is both justified and useful to intervene in, and/or support, specific zones of mutual trust, or - by contrast - take deliberate decisions to leave well alone when they are operating effectively without intervention and/or support.

7.4. Evaluation and monitoring

The way in which the revised levels operate should be examined, in particular in relation to enhanced transparency, increasing mutual trust, and enhanced access to learning and employment. This should include monitoring of impact using a series of defined performance measures, linking to EU policy imperatives.

Annex 1

ISCED 97

International standard classification of education (ISCED), Unesco				
Proxy criteria for contents			Code	Complementary dimensions
Main criteria	Subsidiary criteria			Name of the level
Educational properties school or centre-based minimum age upper age limit	Staff qualification		0	
Beginning of systematic apprenticeship of reading, writing and mathematics	Entry into the nationally designated primary institutions or programmes, start of compulsory education	Primary education first stage of basic education	1	Pre-primary education
Subject presentation full implementation of basic skills and foundation for lifelong learning	Entry after some six years of primary education, end of the cycle after nine years since the beginning of primary education, end of compulsory education, several teachers conduct classes in their field of specialisation	Lower secondary education second stage of basic education	2	Type of subsequent education or destination programme orientation
Typical entrance qualification minimum entrance requirement		(Upper) secondary education	3	Type of subsequent education or destination programme orientation cumulative duration since the beginning of ISCED level 3
Entrance requirement, content, age, duration		Post-secondary non tertiary education	4	Type of subsequent education or destination, cumulative duration since the beginning of ISCED level 3 programme orientation
Minimum entrance requirement, type of certification obtained, duration		First stage of tertiary education (not leading directly to an advanced research qualification)	5	Type of programmes cumulative theoretical duration at tertiary national degree and qualification structure
Research oriented content, submission of thesis or dissertation	Prepare graduates for faculty and research posts	Second stage of tertiary education (leading to an advanced research qualification)	6	None

Annex 2

ISCO and ISCED levels

ISCO skill level	ISCED categories
First skill level	ISCED category 1, comprising primary education which generally begins at ages five-seven years and lasts about five years.
Second skill level	ISCED categories 2 and 3, comprising the first and second stages of secondary education. The first stage begins at the age of 11 or 12 and lasts about three years, while the second stage begins at the age of 14 or 15 and also lasts about three years. A period of on-the-job training or experience may be necessary, sometimes formalised in apprenticeships. This period may supplement the formal training or may replace it partly or, in some cases, wholly.
Third skill level	ISCED category 5 (category 4 has been deliberately left without content) comprising education which begins at the age of 17 or 18, lasts about four years, and leads to an award not equivalent to a first university degree.
Fourth skill level	ISCED categories 6 and 7, comprising education which begins at the age of 17 or 18, lasts about three, four or more years, and leads to a university or postgraduate university degree or the equivalent.

Annex 3

European training levels, 1985

Level 1

Training providing access to this level: compulsory education and professional initiation. This professional initiation is acquired at an educational establishment, in an out-of-school training programme, or at the undertaking of the individual. The volume of theoretical knowledge and practical capabilities involved is very limited. This form of training must primarily enable the holder to perform relatively simple work and may be fairly quickly acquired.

Level 2

Training providing access to this level: compulsory education and vocational training (including, in particular, apprenticeships). This level corresponds to a level where the holder is fully qualified to engage in a specific activity, with the capacity to use the instruments and techniques relating thereto. This activity involves chiefly the performance of work which may be independent within the limits of the relevant techniques.

Level 3

Training providing access to this level: compulsory education and/or vocational training and additional technical training or technical educational training, or other secondary level training. This form of training involves a greater fund of theoretical knowledge than Level 2. Activity involves chiefly technical work which can be performed independently and/or entail executive and coordination duties.

Level 4

Training providing access to this level: secondary training (general or vocational) and postsecondary technical training. This form of training involves high-level technical training acquired at or outside educational establishments. The resultant qualification covers a higher level of knowledge and of capabilities. It does not generally require mastery of the scientific bases of the various areas concerned. Such capabilities and knowledge make it possible in a generally autonomous or in an independent way to assume design and/or management and/or administrative responsibilities.

Level 5

Training providing access to this level: secondary training (general or vocational) and complete higher training. This form of training generally leads to an autonomously pursued vocational activity - as an employee or as self-employed person - entailing a mastery of the scientific bases of the occupation. The qualifications required for engaging in a vocational activity may be integrated at these various levels.

Annex 4

Jaques' levels of task complexity and types of thinking

Levels of task complexity, adapted from Jaques (1996)

Demand of task	Task complexity	Thinking and acting
Level 7	Strategic options, alternative routes, transform operating systems	They must pursue alternative big plans producing business units by development, acquisitions, mergers or joint ventures drawing on internationally sources financing. They use conceptual abstract information complexity and serial pathway construction and achievement.
Level 6	Data accumulation in overview and diagnosis	They develop networks to accumulate diagnostic information and create a friendly environment making it possible to judge corporate investment priorities to enhance the value of corporate assets in the balance sheet and to contribute to corporate success and survival. They use cumulative processing of conceptual abstract complexity.
Level 5	Practical judgement of consequences of changes	They can cope with a means of direct action with a constantly shifting kaleidoscope of events and consequences of far too many variables to map on a project chart. They sense interconnections between variables in the organisation and the environment and continually adjust them in relation to each other with a sensing of all of the second and third order effects. They use declarative processing of conceptual abstract complexity.
Level 4	Parallel processing and trading off	They can parallel process several interacting projects, pacing them in relation to each other in resources and time. They can do trade offs between tasks to maintain progress along the composite route to the goal. They use symbolic verbal information complexity, parallel processing.
Level 3	Construct alternative routes to goals	They use direct action plus diagnostic accumulation but also must be able to encompass the whole process within a plan that has a pathway to goal completion that you have already worked out. They must be able to devise alternative plans if need be. They use symbolic verbal information complexity, serial processing.
Level 2	Data accumulation and diagnosis	They not only overcome immediate obstacles by direct action but also are able to reflect on what is happening so that obstacles can be anticipated. They accumulate and consciously sort data to diagnose problems and prevent others from occurring. They use symbolic verbal information complexity, cumulative processing.
Level 1	Direct judgement	Individual follows a linear pathway to a goal getting continual feedback to proceed and using previously learned methods for overcoming immediate obstacles or reporting back. They use symbolic verbal information complexity, declarative processing.

Types of thinking

Type	Description
Declarative processing	Gives several entirely separate reasons for something.
Cumulative processing	Gives several different reasons for something which are presented as having weight when taken together.
Serial processing	Gives a line of thought made up of a sequence of reasons, each one leading to the next, thus creating a reasoning chain.
Parallel processing	Several lines of thought are held in parallel and can be linked together at several points so that evidence from one line can bolster another to support a favoured outcome.

Annex 5

An adapted Dreyfus' 'ladder of competence'

Level	Description	Description learning modes (% embodiment)*	Software engineering examples
Novice (beginner)	Just getting started in the domain. All action appears to be governed by rules defining allowable moves and strategies. Common situations are unfamiliar and are described by more rules.	Memorisation, drill, and simple practice. Demonstrations of play. Practice in simple situations (0 %).	Starting programmer. Focuses on syntax, compilation, simple debugging. Basic concepts of objects. Basic algorithms. Basic programme design, software methods.
Advanced beginner (rookie)	Recognises common situations that help in recalling which rules should be exercised. Most action is deliberate application of rules or conscious recall of prior actions in the familiar situations. Can perform simple actions for customers; needs supervision for more complex tasks.	Problem solving and practice with rules and strategies. Play in realistic situations with supervision. Repeated practice with common situations (30 %).	Comfortable with syntax. Composes basic programs to solve problems up to several pages and tens of modules. Can write simple programs for customers. Works well with direction.
Professional (competent)	Carries out standard actions without causing breakdowns. Can fulfil standard promises to customers satisfactorily without supervision. Performs most standard actions without conscious application of rules. When faced with a new situation, works out appropriate actions by application of rules.	Advanced problem-solving, coaching on problem solving and projects. Extensive practice in both common and exceptional situations. Apprenticeship to more advanced professionals and teams. Membership in professional networks (60 %).	Skilled in multiple languages. Deals with programs of hundreds of modules. Designs systems and test protocols, integrates components. Helps customers solve system design and configuration problems. Can work in teams and with customers. May be a team leader.
Proficient professional (star)	Deals with complex situations effortlessly. seldom thinks in terms of rules and may have some difficulty telling others what rules he or she works with. Appropriate action appears to come from experience and intuition, and is deliberately chosen. Individual performance is a benchmark for others. Considerable experience and practice across a wide range of situations over years of work.	Apprenticeship to experts. Coaching. Putting self into wide range of situations. Membership and contribution to professional networks. Teaches others (80 %).	Highly productive. Designs and manages complex systems. Ingenious solutions. Clear code. Excellent problem-solver. Productivity much higher than average. Receives positive assessments from customers and other professionals.

Expert (virtuoso)	Consistently inspiring and excellent performances. Appears to solve difficult, complex problems effortlessly. Enormous breadth and depth of knowledge. Acts appropriately without thought or conscious choice of actions. Routinely forms and leads high-performance teams; admired by others as a benchmark of team performance. Performance standards are well beyond those of most practitioners.	Apprenticeship to masters. Advanced coaching, development of breadth, focus on observing and adopting style of the teacher. Teaches others. Years or decades of practice (95 %).	Extensive experience with large systems. Anticipates subtle and indirect design issues. Anticipates and responds to customer concerns. Leads teams well. High productivity. Solves difficult configuration and performance problems quickly.
Master	Capacity for long-range strategic thinking and action. Sees historical drifts and shifting clearings. Has studied with many different teachers and has developed own distinctive style. Has produced innovations in the standard practices of others, altered the course of history in the field, and knows how to do this again. Teaches others to be experts and masters.	Learning continues by working with other masters as teachers. Creates and leads professional networks. Teaches others (100 %).	Develops new methods and practices for the field. Admired for long, historical perspectives and strategies.
Legend	Has attained high public standing with almost mythical status as a master and performer. Leverages public standing to achieve results only public figures could attain. Work has widely accepted impact.	Same as for master with emphasis on public appearance (100 %).	Widely admired software engineer who publicly set the pace for everyone else. His or her articulations shape the direction of the field.

The percentage figures given refer to the notion of embodiment, which can be understood as a readiness for application or competence that draws on knowledge and skills and turns them into immediate effective practice. Peter Denning offers this notion in support of the theories of Dreyfus on the relative inadequacy of computers and distance learning for top professionals.

Annex 6

Reference levels for language development

Basic levels	Second range of levels	Illustration of level using spoken language
Basic user	Breakthrough	Simple words and phrases to describe where I live and people I know
	Waystage	Series of phrases and sentences to describe family, people, living conditions, education and job.
Independent user	Threshold	Connect phrases to describe experiences and events, dreams hopes and ambitions. Give reasons for opinions and plans. Narration of a story.
	Vantage	Detailed description of a wide range of subjects. Explain a viewpoint on a topical issue and give details of various options.
Proficient user	Effective operational proficiency	Clear, detailed description of complex subjects, integrating sub themes, developing particular points and rounding off with a conclusion.
	Mastery	Clear, smoothly flowing description or argument in a style appropriate to context and with a logical structure that helps the listener appreciate and remember significant points.

Annex 7

Interskills levels

Occupational outcome	includes
Semi skilled worker	
Skilled worker	Craftsperson or tradesperson
Technician	Supervisory, technical assistant, advanced craftsperson
Higher technician	Master craftsperson, associate or paraprofessional

Annex 8

Level characteristics for IT training, Fachhochschulen, Baden Württemberg

Main level descriptor	Sublevels	Example text (sampled from the 4 levels)
Operative context	Context characteristics	L1: defined context requiring application of standardised methods
	Level of autonomy	L4: complex, unexpected and normally specialised requiring innovative work
	Ethical understanding	L3: recognition of personal responsibility and professional ethical principles
Cognitive descriptive characteristics trainees	Knowledge and understanding	L2: process detailed knowledge of one (or more) areas of information technology
	Analysis	L4: able to cope with complexity, gaps or contradictions in basic knowledge
	Synthesis/creativity	L3: can transfer abstract data and concepts to a particular situation and design innovative solutions with little direction
	Evaluation	L1: can evaluate reliability of data with defined methods
Additional transferable skills trainees	Problem solving	L3: can confidently recognise and define complex problems with flexibility
	Planning and organising training	L2: procure access to training resources and make use of them
	Communications and presentation	L1: can communicate in a form appropriate to discipline and honour commitments to others
	Self assessment practice reflection	L4: feels part of a scientifically oriented community. Habitually reflects on own and others practice to improve personal performance

Annex 9

Formal national qualifications frameworks studied as part of the project

1. Australia

Diagram of Australian qualifications framework (AQF) ⁽⁵⁾

Schools sector	Vocational education and training sector	Higher education sector
Senior secondary certificate of education ⁽¹⁾	Advanced Diploma Diploma Certificate IV Certificate III Certificate II Certificate I	Doctoral Degree Masters Degree Graduate Diploma Graduate Certificate Bachelor Degree Advanced Diploma Diploma

⁽¹⁾ The senior secondary certificate of education is referred to by local titles at a state and territory level for example.

1.1. What is the AQF?

The AQF acts as a policy instrument that links together the above qualifications and provides an assured national system of qualifications. It allows for flexibility for learners to plan their careers.

The framework was introduced across Australia on 1 January 1995 and was phased in over five years, with full implementation achieved by 2000 ⁽⁶⁾.

⁽⁵⁾ Diagram and other information in this section obtained from the Australian qualifications framework advisory board website www.aqf.edu.au/aboutaqf.htm

1.2. Rationale and objectives of the AQF

The AQF is intended to promote lifelong learning; it helps users find their way through the qualifications system. This is seen as important as the gradual disappearance of unskilled work has made it necessary for people to add to their skills throughout their working lives. The AQF combines work based and academic qualifications in one framework, to ensure flexibility in career planning.

1.3. Key objectives

The AQF should:

- provide nationally consistent recognition of outcomes achieved in post-compulsory education;
- help with developing flexible pathways which assist people to move more easily between education and training sectors and between those sectors and the labour market by providing the basis for recognition of prior learning, including credit transfer and work and life experience;
- integrate and streamline the requirements of participating providers, employers and employees, individuals and interested organisations;
- offer flexibility to suit the diversity of purposes of education and training;
- encourage individuals to progress through the levels of education and training by improving access to qualifications, clearly defining avenues for achievement, and generally contributing to lifelong learning;
- encourage the provision of more and higher quality vocational education and training through qualifications that normally meet workplace requirements and vocational needs, thus contributing to national economic performance;
- promote national and international recognition of qualifications offered in Australia.

1.4. Learning pathways

AQF qualifications link with each other in a range of learning pathways between schools, vocational education and training providers and universities as needed by learners. The AQF makes a specific commitment to flexible, transparent and systematic learning pathways and to the removal of boundaries between educational sectors. It therefore supports cross sectoral link programs such as:

⁽⁶⁾ It should be noted that there are a few RATE certificates in HE which are not covered by the AQF. There are also a small number of associate degrees which are not included as they are not widely offered nor are they nationally consistent.

- VET in schools, which allows schools across the country to offer industry based units of learning that can contribute to both the senior secondary certificate of education and certificate I-IV qualifications;
- articulation and credit transfer arrangements between registered vocational education and training providers and universities, involving efficient articulation of programmes and maximum credit transfer;
- recognition of prior learning, by which credits are granted towards qualifications through assessment of an individual's knowledge and skills gained through education, training, work and life experience.

The pathway from university to vocational education and training qualifications is becoming increasingly popular as a way of gaining industry experience needed to increase employment opportunities.

1.5. Recognition of prior learning

Recognition of prior learning (RPL) allows a person to receive recognition and credit for the knowledge and skills they have, no matter how and where they were attained, including overseas. This can include skills from:

- previous study (including courses at school or college, through adult education classes or training programmes at work);
- work experience (including both work that is paid and unpaid);
- life experience (such as leisure pursuits or voluntary work).

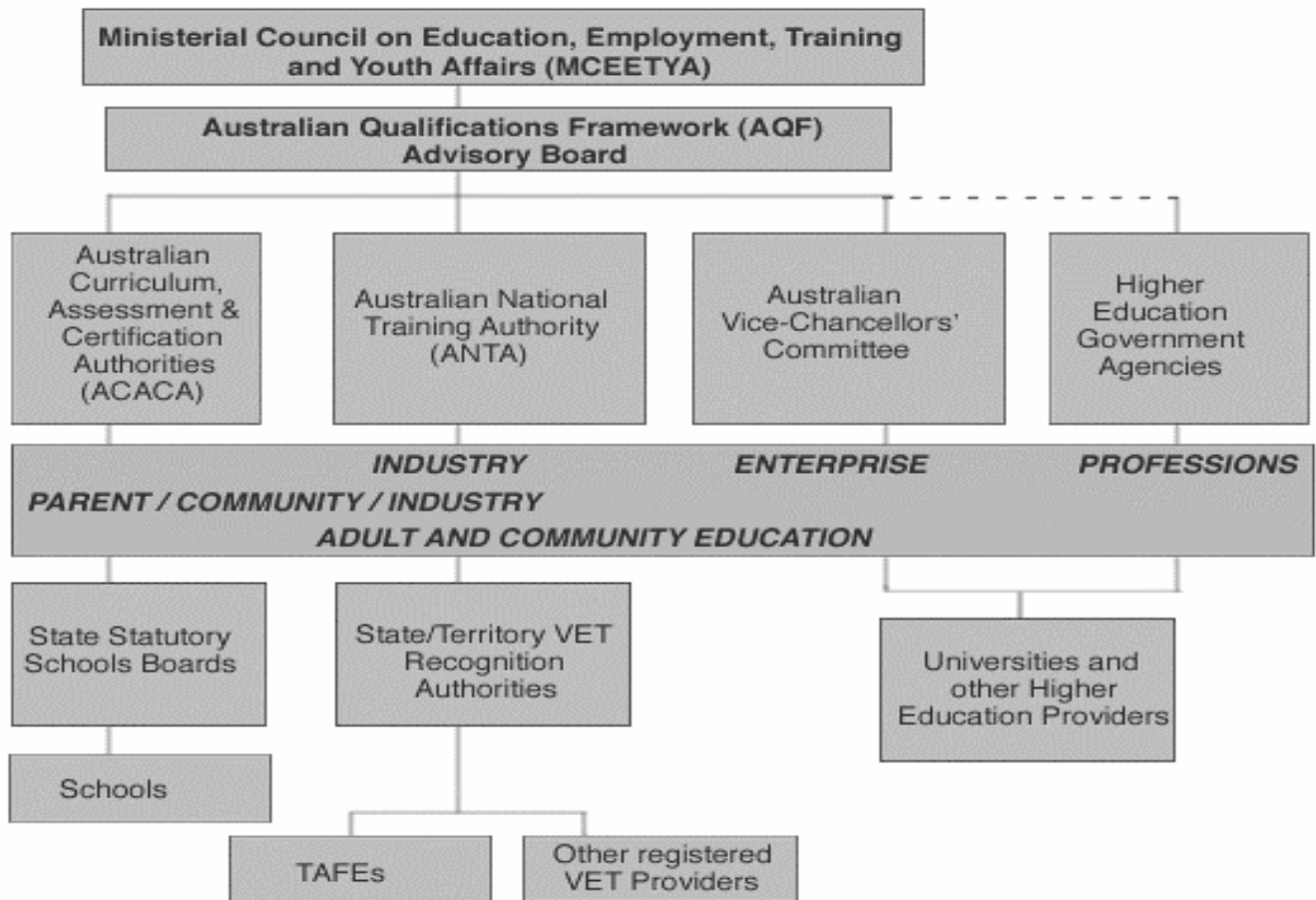
What matters in obtaining recognition of prior learning is that the knowledge and skills learners have gained help to meet the learning outcomes and assessment criteria of the qualification for which they are seeking credit. In the VET sector, RPL assessment can result in a full qualification or a statement of attainment for partial completion.

1.6. Levels and level descriptors

There are no numbered levels within the AQF. Instead of a levels structure there are qualifications guidelines that define the level of a qualification in terms of its characteristics of learning outcomes and pathways to attain it. For example, the diploma and advanced diploma qualifications which are located in both the higher education and vocational education and training sectors are determined to be equivalent because they have common learning outcomes and thus share the same title, irrespective of different delivery methodologies/educational programmes in each sector.

1.7. Stakeholders and the grounds for inclusion of qualifications

Figure 8: Cross sectoral support for the AQF



The above diagram details the main stakeholders in this system. The AQF is a consensus policy instrument that relies on the regulatory frameworks within the three sectors for operational implementation and regulation. Each sector authorises its own qualifications and has responsibility for primarily offering, protecting and setting standards for a qualification, supplemented by the AQF. Thus the AQFAB ⁽⁷⁾ does not itself accredit qualifications but works through the regulatory mechanisms that exist within the sectors. The system is further decentralised because of the status of Australia as a country of federated states; various educational responsibilities are divided between the states and territories and the Commonwealth (federal) government. The AQF seeks to ensure that there is a national system of qualifications overarching these decentralised responsibilities. Therefore, for the senior secondary certificate of education qualification, the main stakeholders are the various

⁽⁷⁾ Australian qualifications framework advisory board.

schools boards in each state and territory. Within the vocational and educational training sector, the main stakeholders are the national VET body, the Australian national training authority (ANTA), supplemented by the state/territory training boards that oversee registration for delivery and do some accrediting against the AQF outside the national training packages that ANTA develops.

Industry (and the unions and employer bodies) are also major stakeholders given that the vocational qualifications are developed against industry-driven competences.

In the higher education sector, universities are self-accrediting, but the vast majority of their offerings are AQF qualifications; the Australian vice chancellors' committee is the peak agency for all Australian universities. There are also a small number of higher education qualifications accredited by the government in the various states/territories and therefore these HE agencies stakeholders are consulted regularly. The AQFAB comprises representatives from each of these sectors and stakeholders and reports to the overarching national body with responsibilities for all education: the state, territory and Commonwealth ministers of education, training, employment and youth affairs (MCEETYA).

2. New Zealand

2.1. What is the national qualifications framework?

The National qualifications framework (NQF) has been in development since 1990 and is a system designed to recognise the attainment of knowledge, understanding and skills by everyone in New Zealand. It is a structure designed to bring coherence to qualifications, which are quality assured and nationally recognised. Learners can register on the framework and are able to accumulate credits over time and at their own pace as they work towards a qualification. The NQF qualifications are defined in terms of learning outcomes and credit totals.

2.2. Rationale and purposes of the NQF

The New Zealand Qualifications authority states that the NQF is a means by which national qualifications have a high credibility both throughout New Zealand and overseas, and are related to each other in ways that assist people to upgrade their qualifications without having to repeat unnecessarily previous study and assessment.

Also, the NQF allows for the recognition of the traditional knowledge of New Zealand's indigenous people, the Maori. Maori experts are involved in the development of unit standards in fields of practice such as Reo Maori (Maori language) and Whakairo (carving). In the past these subjects have been viewed as 'hobbies' or 'recreational activities'.

Maori experts are also involved in the development of unit standards that provide a Maori dimension to general subjects such as business and management, tourism and so on.

The framework encourages lifelong learning, so that people may manage career changes.

For learners generally, the framework offers ⁽⁸⁾:

- choice and flexibility in what, where and how to learn;
- clear understanding of what is needed to succeed in studies or careers;
- formal recognition of skills and knowledge;
- nationally recognised qualifications.

For learners in the workplace it allows them to:

- earn while they learn new skills;
- achieve a portable qualification that is nationally and internationally recognised;
- work alongside experienced and qualified staff;
- achieve formal recognition of skills and knowledge.

For employers it allows:

- the design of education and training by industry for industry;
- training responsive to new markets, products, services and technologies;
- a more skilled and adaptable workforce;
- training employees within their own company systems;

For education and training providers it offers the opportunity to:

- develop appropriate curriculum and programmes for different learning styles and needs;
- offer nationally recognised programmes and qualifications;
- develop a greater working relationship with industry;
- create pathways from one programme to another.

⁽⁸⁾ Quoted from the leaflet *National qualifications framework - National recognition for your skills and qualifications* published by the New Zealand qualifications authority, reorder number 002.

2.3. Grounds for including qualifications

The central feature of the qualifications framework is that all qualifications are now based on defined and accepted national standards. The standards development process was a massive undertaking involving extensive consultation and partnerships with industry, schools, tertiary providers and government agencies. For each area of skills and knowledge, a skills analysis was completed and standards developed and packaged into qualifications. This drafting and consultation process, although onerous, ensured that the standards and qualifications developed were appropriate to the needs of each industry or field of knowledge.

About 10 years ago, New Zealand's qualifications system was a source of frustration for learners. Local qualifications were often non-transferable between industries or institutions, there was little consistency in the naming of qualifications and several sectors had no means of formally recognising people's skills. The introduction of framework standards and qualifications has given learners national recognition for their achievements and qualifications that are truly portable.

All qualifications currently registered on the framework are composed of registered unit standards, statements that describe what a learner knows or can do. Because the unit standards are nationally agreed, learners' achievements can be recognised in several contexts. Their knowledge and skills will be transferable between qualifications and providers.

Standards specify learning outcomes. Having qualifications based on learning outcomes is what makes framework qualifications different from other qualifications systems (which are often focused more on outputs such as courses, or inputs such as curricula or teaching hours). Outcomes models have been endorsed by international bodies involved with funding education systems (e.g. the World Bank, Asian Development Bank and the OECD).

The framework is built on a process of consensus. Standards are drafted by expert groups (engineers for engineering standards, geographers for geography standards and so on). The draft standards are then circulated to stakeholders for comment and contribution. Once standards are agreed to and registered, they are subject to review by stakeholders and experts on a regular basis. This allows for standards to be refined and updated over time.

Each unit standard has a defined credit value and sits at a specified level in the framework. Credits may be accumulated from different learning institutions or workplaces towards a single qualification. All organisations accredited to assess against standards recognise framework credits awarded by others.

2.4. Levels

Level	Qualification	
10	Doctorates	Post graduate degrees
9	Masters degrees	
8	Post graduate degrees/diplomas Honours degrees	Degrees
7	Initial, undergraduate degree	
6	Technician/paraprofessional	National diplomas
5		
4	Skilled trade	National certificates
3	Semi-skilled trade	
2	Introductory trade	
1	Basic introductory trade	

The framework has 10 levels. Level 1 is entry level education and training, broadly comparable to Year 11 studies. Levels 1-4 are national certificate level. Levels 5-7 are at national diploma level and Level 8 is other degrees: higher certificates and diplomas.

However, a new qualification is being introduced into the framework from 2002, the national certificate of educational achievement (NCEA). It is set to become the national qualification for all year 11 students. The NCEA level 1 replaced the current school certificate in 2002. In 2003 NCEA level 2 replaced the sixth form certificate and in 2004 NCEA level 3 will replace the university bursary examination.

The NCEA will use set standards to show what students know and can do. Every standard is worth a set number of credits. Learners will collect credits when they have achieved the standard set for a credit grade. The credits are like points towards a qualification. When learners have a total of 80 credits, then they have gained a national certificate of educational achievement. The students who enrol on the qualifications framework will receive an updated record of their achievements every year in which they gain credit. Students will also be issued with a unique PIN, which will allow them to access and print off copies of their records from the Internet.

2.5. Stakeholders

The New Zealand Qualifications Authority manages the framework, the registration of both learners and providers, and also provides a quality assurance service for qualifications by maintaining processes to accredit qualifications⁽⁹⁾. The list of approved qualifications is the national register of quality assured qualifications and aims to show the relationship between qualifications and to make credit transfer easier to manage for learners and providers.

Providers are also an important element of the framework. A provider can be any individual organisation supplying education and/or training and/or assessment services.

All providers have to be accredited to assess for the award of credit towards national qualifications framework qualifications. Before applying for accreditation, private and government training establishments must be registered with the qualifications authority.

Providers include schools, polytechnics, universities, *wananga* and private and government training establishments.

Providers can only be accredited to the NQF if they fulfil quality requirements to prove they have the tutors, resources and equipment to run their programmes.

Industry training organisations (ITOs) develop standards and national qualifications for specific industries and professions. They are responsible for about half the standards on the framework.

For employers, the qualifications are a guarantee of what their employees can do. Since many of the qualifications are developed by industry for industry, employers can feed into the process of designing standards.

Learners have a great stake in the success of the qualifications framework. They have to sign up to register and then work towards the qualifications on the framework.

3. Ireland

3.1. Framework diagram⁽¹⁰⁾

Legislation has recently been enacted providing for a national framework of qualifications in Ireland.

⁽⁹⁾ Quoted from the leaflet *National qualifications framework - National recognition for your skills and qualifications* published by the New Zealand qualifications authority, reorder number 002.

⁽¹⁰⁾ Diagram sourced from www.eures-crossborder.org, a website which details qualifications from R.o.I and N.I.

This diagram outlines an estimate ⁽¹¹⁾ of the qualifications arrangements which were in place prior to the establishment of the act and their approximate relationship to each other, this is likely to change.

Table 7: Framework diagram

Qualification level	Level
Degree/postgraduate	5
National diploma ⁽¹⁾	4
National certificate ⁽²⁾ Leaving certificate ⁽³⁾ Leaving certificate applied National vocational certificate - level 2 National craft certificate Senior trade certificate	3
Post leaving certificate course (PLCs) junior certificate National vocational certificate - level 1	2
National foundation certificate	1

⁽¹⁾ Validated by the national council for education awards.

⁽²⁾ Validated by the national council for education awards

⁽³⁾ Validated by the department of education.

3.2. What is the qualifications framework/system? ⁽¹²⁾

This national framework of qualifications is still under development. The qualifications (education and training act 1999) provided for the setting up of the national qualifications authority of Ireland (NQAI), which was established in February 2001. It will be the task of the authority to establish, monitor and maintain the framework.

3.4. Rationale and main purposes

The principal aims of the qualifications (education and training) act and of the development of a national framework are:

- to establish and develop standards of knowledge, skill or competence;
- to promote the quality of further education and training and higher education and training;
- to provide a system for coordinating and comparing education and training awards;
- to promote and maintain procedures for access, transfer and progression.

The individual student is central to the thrust and purpose of the act. There is a very broad definition of a learner in the act and this is one of the most important aspects of the legislation. A learner can be someone in an educational or training institution or involved in

⁽¹¹⁾ It should be noted that this diagram is an approximation for illustrative purposes only, the relative relationships and weightings of awards have never been formally done in the Ireland.

⁽¹²⁾ Information in this and the following sections courtesy of the National qualifications authority of Ireland.

what might be described as formal learning situations. Furthermore a learner is any person who is acquiring or has acquired knowledge, skill or competence regardless of how, when or where that takes or took place. Learners, therefore, may be students in educational institutions, workers in the workplace, participants in community activity or independent learners.

The national qualifications authority of Ireland is now commencing the preparation of a position/issues paper on developing a national framework of qualifications which will then be the subject of national and international consultation. It is envisaged that the document will concern the nature of the policies and criteria on which the framework shall be based, what steps need to be taken in the development of a framework, what the nature of the framework should be and how will it operate. It is further envisaged that the paper will concern the nature of the procedures for access, transfer and progression that the authority is to determine and how the procedures should operate. It is hoped that the paper will be published by the end of the year. Following further consideration and consultation, the authority then aims to develop the framework of qualifications itself.

3.5. Grounds for inclusion of qualifications

The national qualifications authority will work alongside the new awards councils that were established in June 2001 (the further education and training awards council and the higher education and training awards council).

These new councils will make national awards available for all education and training in the state, other than that provided in the primary and post-primary sectors, the Dublin institute of technology, and the universities.

In addition, the act provides for delegation of authority to make higher education and training awards to other institutes of technology and to make further education and training awards to FÁS, CERT and Teagasc (the state training providers in industry generally, tourism and agriculture, respectively).

Any provider of education and training, regardless of the source of that provision, whether it is in an educational institution, the workplace, or the community, will be able to apply to either of the two new councils for validation of a programme. Section 8(2)(c) of the 1999 act sets out that the authority:

‘... shall establish, in consultation with the further education and training awards council and the higher education and training awards council, procedures for the performance by them of their functions and shall review those procedures from time to time ...’

There was a need for the authority to establish procedures for the performance by the new councils of their functions. Following advice from the two councils, the procedures established by the authority have allowed for a transitional period until the end of December

2001, whereby the new awarding councils will use the existing processes of the awarding bodies previously in place.

3.6. Quality assurance

The 1999 act also contains new quality assurance procedures for any provider with programmes validated by either of the two awarding councils or with the delegated authority from an awarding council to make awards itself.

The new quality assurance procedures must be agreed between the appropriate council and the provider. They must include regular evaluation by national and international experts and evaluation by learners. The provider must implement any of the findings arising from the application of the procedures that the awarding council determines. The effectiveness of the procedures must be reviewed on a regular basis by the council.

Similar arrangements apply in relation to the Dublin institute of technology, other than that the national qualifications authority of Ireland has the overseeing role of the awarding council.

3.7. Main pathways

The 1999 act decrees that, in future, all providers of education and training must inform learners of the transfer and progression routes available to them when they start a course. These routes are to provide a transparent and comprehensive network which will aid learners in deciding upon and following their career paths. They will also ensure that learners may be confident of the quality of the programmes they are undertaking.

3.8. Stakeholders

The Authority will work with the new awards councils, the universities, the Dublin Institute of Technology and also with the existing providers of education and training and with learners and social partners. Also, as previously mentioned, the authority is preparing a position paper on the framework, which will be consulted on both nationally and internationally.

4. Scotland

4.1. The framework: diagram

The Scottish credit and qualifications framework has been created by bringing together into a single unified framework all Scottish mainstream qualifications: the qualifications of higher education institutions; SQA national and higher national qualifications; and SVQs. There are

12 levels ranging from access 1 (national qualification) at SCQF level 1 to doctorate at SCQF level 12.

Table 8: The Scottish credit and qualifications framework

SCQF level	SQA national units, courses and group awards	Higher education	SVQ*	SCQF level
12		Doctorates		12
11		Masters	SVQ5	11
10		Honours degree		10
		Graduate Diploma/certificate ⁽¹⁾		
9		Ordinary degree		9
		Graduate Diploma/certificate		
8		Higher national diploma	SVQ 4	8
		Diploma in H. Ed		
7	Advanced higher	Higher national certificate		7
		Certificate in H. Ed		
6	Higher		SVQ 3 ⁽²⁾	6
5	Intermediate 2		SVQ 2	5
	Credit standard grade			
4	Intermediate 1		SVQ 1	4
	General standard grade			
3	Access 3			3
	Foundation standard grade			
2	Access 2			2
1	Access 1			1

⁽¹⁾ These qualifications are differentiated by volume of outcomes and may be offered at either level.

⁽²⁾ The positioning of SVQs in the table gives a broad indication of their place in the framework. Like most group awards, SVQs are likely to be made up of units at several levels. The current placing of SVQ3 at level 6 is based on the way in which SVQs are positioned in statutory documents and national targets. However there is a view that in some sectors, SVQ3 could be placed at level 7. Further planned work with the Scottish council of NTOs and individual NTOs will clarify this in the future within an overall UK context.

4.2. What is the qualifications framework/system?

The SCQF is a unified integrated framework covering qualifications awarded by Scottish HEIs and those awarded and accredited by the SQA. It has been developed jointly by the quality assurance agency for higher education (Scottish office), universities Scotland and the Scottish Qualifications Authority. SQA's national qualifications have been available in Scotland's schools and colleges since 1999 following a review of post-16 qualifications. The old SCE Higher has been phased out and a new higher has taken its place. The certificate of sixth year study (CSYS) has also now been replaced by a completely new qualification, the advanced higher. The new higher qualification has the same value as the qualification it replaced, i.e. it may be used for university entrance, getting a place on a training course, or for seeking employment.

4.3. Scottish group awards

These courses and units may be built up into Scottish group awards (SGAs). These are larger qualifications which take longer to achieve, and may be seen as more like HNCs and HNDs. Students can take four or five subjects to work towards an SGA depending on the design rules. These group awards are useful for those returning to education; the unit format means that learners can work at their own pace. Credits may be transferred from other SQA courses such as standard grades or from SVQs.

Other integral parts of the framework cover SVQs and all qualifications awarded by Scottish HEIs.

4.4. Rationale and main purposes

A key aim of the SCQF is to include all programmes of learning and qualifications currently not in the framework that are subject to assessment that is valid, reliable and quality assured. The criteria and processes for this are currently being developed. However all learning, whether it is formally assessed or not, should also be able to be placed at an appropriate level in the framework. This is seen as an important development for many community-based programmes of learning.

These developments support the vision of the framework as a tool for widening participation in learning at all levels and in all forms of delivery.

4.5. Main pathways

Within the SCQF, credits are defined in terms of Scotcat points; these points are allocated to outcomes of learning that are subject to valid and reliable assessment methods. Scotcat points are based upon the amount of time the ‘average’ learner at a particular level may be expected to take to achieve the learning outcomes. This is based on the Scotcat system used in Scottish HEIs. The points may be seen as a form of currency for learning outcomes.

One point is allocated for every 10 hours of notional learning time required, although learners do not lose/gain extra points if they take less/more time to achieve the outcomes. Most mainstream qualifications in Scotland have been developed on a credit basis with design rules related to the amount and level of general credit attached to each qualification. For example, the achievement of an honours degree requires the accumulation of 480 Scotcat points, at least 90 of which must be at level 10 while an SQA higher course requires the accumulation of 24 Scotcat points at level 6. Work is underway with the Scottish council for NTOs and individual NTOs to include SVQs in this system as fully as possible.

General Scotcat points can be used to assist learners to transfer between programmes. The awarding bodies - the SQA and individual universities - will continue to determine the extent to which this kind of transfer can take place. They decide the amount of specific credit points

that can be allocated to previous learning and qualifications and so enable credit transfer to take place between and within institutions and across education and training sectors.

4.6. Levels

There are 12 levels in this framework, from very basic education provision to doctorates. A single level may contain one or more qualifications. The levels have been designed to encourage students to progress to the next level in a variety of ways, so that they may achieve their potential. For example, level 5 shows different qualifications, each one with different progression routes available to learners in school, FE or the workplace. The framework uses agreed general level descriptors to provide broad comparisons between learning outcomes which have been subjected to quality assured assessment. These descriptors are not statements of required learning at each level but may be used as a reference point when:

- giving guidance/information on learning opportunities/training provision;
- determining the level within the framework of a qualification or programme of learning;
- assessing previous learning;
- designing a programme of learning.

5. South Africa ⁽¹³⁾

Table 9: Framework diagram

NQF level	Band	Qualification type
8	Higher education and training	• Post-doctoral research degrees
7		• Doctorates
6		• Masters degrees
5		• Professional qualifications
		• Honours degrees
		• National first degrees
		• Higher diplomas
		• National diplomas
		• National certificates
Further education and training certificate (FETC)		
4	Further education and training	National certificates
3		
2		
General education and training certificate (GETC)		
1	General education and	Grade 9 ABET Level 4

⁽¹³⁾ With the exception of the section headings, all text here is directly quoted from the South African Qualifications Authority website.

	training	National certificates
--	----------	-----------------------

5.1. What is the qualifications framework/system?

It is a framework i.e. it sets the boundaries - a set of principles and guidelines which provide a vision, a philosophical base and an organisational structure - for construction, in this case, of a qualifications system. Detailed development and implementation is carried out within these boundaries. It is national because it is a national resource, representing a national effort at integrating education and training into a unified structure of recognised qualifications. It is a framework of qualifications i.e. records of learner achievement.

In short, the NQF is the set of principles and guidelines by which records of learner achievement are registered to enable national recognition of acquired skills and knowledge, thereby ensuring an integrated system that encourages lifelong learning.

5.2. Rationale and main purposes

5.2.1. Objectives

The objectives of the NQF as outlined in the SAQA (¹⁴) Act are as follows:

- to create an integrated national framework for learning achievements;
- facilitate access to, and mobility and progression within education, training and career paths;
- enhance the quality of education and training;
- accelerate the redress of past unfair discrimination in education, training and employment opportunities;
- contribute to the full personal development of each learner and the social and economic development of the nation at large.

5.2.2. Rationale

In 1994 the international community witnessed the birth of a new democracy and welcomed the new South Africa as the most recent member of its global village. In accepting that honour, this country took on the associated challenges of that position.

Many countries all over the world are looking for better ways of educating their people and organising their education and training systems so that they might gain the edge in an

¹⁴) South African qualifications authority act (1995).

increasingly competitive economic global environment. Furthermore, the world is an ever-changing place, politically, geographically and technologically. Indeed, the rapid technological advances of the 20th century have placed education systems under extreme pressure as they try to adapt and incorporate these changes in an effort to produce more creative, effective and adaptable people. Success, or even survival, in such a world demands that South Africa has a national education and training system that provides quality learning, is responsive to the ever-changing influences of the external environment and promotes the development of a nation that is committed to lifelong learning.

When learners know that there are clear learning pathways which provide access to, and mobility and progression within education, training and career paths, they are more inclined to improve their skills and knowledge, as such improvements increase their employment opportunities. The increased skills base of the workforce has a wider implication, namely the enhancement of the functional and intellectual capability of the nation, thereby increasing our chances for success in the global community.

5.2.3. Grounds for inclusion of qualifications

The NSB ⁽¹⁵⁾ regulations indicate that a qualification shall:

- represent a planned combination of learning outcomes which has a defined purpose and which is intended to provide qualifying learners with applied competence and a basis for further learning;
- add value to the qualifying learner by providing status, recognition, enhancing marketability and employability;
- provide benefits to society and the economy;
- comply with the objectives of the NQF;
- include both specific and critical cross-field outcomes that promote lifelong learning;
- where applicable, be internationally comparable;
- incorporate integrated assessment appropriately to ensure that the purpose of the qualification is achieved. Assessment should include a range of formative and summative assessment methods such as portfolios, simulations, workplace assessments and also written and oral examinations;
- indicate in the rules governing the award of the qualification that the qualification may be achieved in whole or in part through the recognition of prior learning, which concept includes but is not limited to learning outcomes achieved through formal, informal and non-formal learning and work experience.

⁽¹⁵⁾ National standards bodies (see diagram below for explanation of their role).

There is provision in the regulations for the registration of qualifications constructed from unit standards as well as the registration of whole qualifications, not constructed from unit standards. Unit standard means registered statements of desired education and training outcomes and their associated assessment criteria together with administrative and other information as specified in the regulations. Both formats of qualification structure however require the specification of learning outcomes, the latter format requiring the articulation of exit level outcomes and associated assessment criteria.

There is much debate about the ability or desirability of reaching agreement on learning outcomes at a national level, and furthermore, about describing learning outcomes in the form of applied competence standards. SAQA has placed the requirement for participation in national stakeholder processes only for those qualifications and standards that are to be registered on the NQF; national recognition requires acceptance by national stakeholders. Furthermore, constructors of qualifications and standards can choose to be rigid or choose to be flexible in the construction of the qualifications and standards, allowing for choice or not. The strength of the NQF processes is that representatives of all key stakeholders in the learning area and not just a select few will make those decisions. Furthermore, through the required process of review all qualifications and standards must be reviewed regularly to ensure that the agreed criteria and requirements are feasible, relevant and desirable. If there is agreement that changes are necessary, there is ample opportunity for those changes to be adopted.

A more complex issue is raised by the notion of learning outcomes and competence standards. Some people raise the problem that the learning outcomes of certain qualifications and standards can relatively easily be described by in the form of competence standards, e.g. the draft standards for engineering qualifications. However, in the case of other qualifications, this is more difficult because the learning outcomes are less obvious or less precise. Any effort to try and establish national agreement will result in a loss of creativity and originality when in fact, it is that very creativity and originality that gives them value. SAQA is of the opinion that the description of a NQF qualification addresses this question i.e. a qualification shall represent a planned combination of learning outcomes which has a defined purpose and which is intended to provide qualifying learners with applied competence and a basis for further learning.

In describing the purpose of qualification, standards setters will have to give consideration as to what the purpose of the qualification is and how it contributes to the learner's development and further learning.

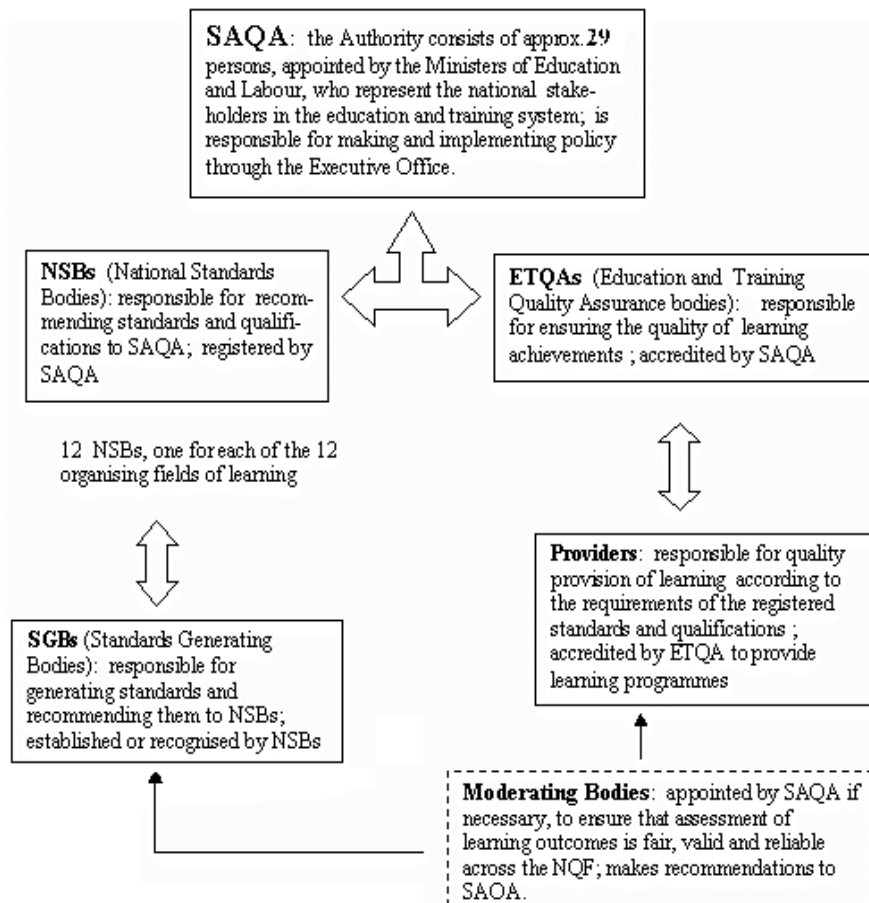
5.3. Levels

SAQA has adopted an eight-level framework, with levels 1 and 8 respectively being regarded as open-ended. Level 1 accommodates three adult basic education and training (ABET) certification levels as well as the general education and training certificate.

6. Stakeholders

Standards setting

Quality assurance



The SAQA Act clearly states that the NQF must be set up after consultation and in cooperation with those bodies and institutions responsible for education, training and certification of standards affected by the NQF.

The fact that the SAQA Act clearly articulates the need for SAQA to do its work in a spirit of consultation and cooperation indicates the commitment of the new democratic government to the principles of representation and participation of all relevant stakeholders in society's institutions. This emphasis on inclusiveness has its roots in a history of exclusion of large sectors of the community from important decision making processes in education and training. For example, the skills to be developed and the content of a learning programme in the past were constructed by the so-called experts in the field, usually academics rooted in formal institutions of learning i.e. 'providers' of education, with little or no consultation with the 'users' of the qualifications i.e. business, labour unions, learners. This led to the

frequently cited criticism that there was little match between what was taught in formal institutions of learning and what was required in the world of work or even for further study. Furthermore, there was little cooperation or consultation between previous ministries of education and manpower; across industries or companies or with the state; between providers of formal education and providers of training. This meant that there was no means to align learning across different providers or courses; qualifications remained sectorally-based, geographically-based or institution-based with little or no formal articulation between allied learning areas.

In spite of the culture of consultation and cooperation in decision-making in the new South Africa, the most logical reason for representivity in decision-making about what learning outcomes for a particular qualification should be, is the question of relevance. For South Africa to remain responsive to changes in the environment, it is essential that all relevant voices in learning are heard: the state, the academics, the business world, the labour market, the providers of education and training to name a few. An inclusive approach to standards setting and the construction of qualifications will enable new trends to be taken into account swiftly, thereby ensuring that South Africa is at the cutting edge of international developments.

SAQA is committed to a process of public consultation in the development and execution of policy. Qualifications and standards are required to go through a process of narrow consultation with stakeholders in the field and a process of broad consultation, whereby the public at large is provided with an opportunity to review and comment on the proposed standards. Furthermore all qualifications and standards are submitted to a reference group which comprises organisations representing the disabled and marginalised sectors of the community, for comment, before registration, in an effort to ensure that proposed standards and qualifications do not discriminate unfairly against any of these sectors of the community.

In the execution of its quality assurance functions, ETQAs are required to have national stakeholder representation. The main purpose of this representation is to ensure public accountability and transparency. In addition all policy documents of SAQA are drawn up through an open consultation process with relevant stakeholders and while in draft form, are published in the *Government Gazette* for public comment. All nominations to SAQA structures, excluding authority members, are published in the *Government Gazette* prior to appointment, to enable public comment. In addition, all documents requiring public comment and all SAQA publications in the *Government Gazette* are posted on the website (<http://www.saqa.org.za>). In this way SAQA ensures social transparency and inclusivity in its work.

An education and training system that is constructed through a process of participation and negotiation to meet the needs of all stakeholders enjoys greater legitimacy and credibility in the society within which it operates than would otherwise be the case. Furthermore SAQA, the guiding body in the South African system, is an impartial ‘overseer’, i.e. it not a state department or an arm of government, it is not an initiative of business, nor of labour, nor is it

allied to the education provider sector. For this reason, SAQA is independent of the agendas of each of these sectors and as such, is able to retain its integrity in facilitating negotiations between education and training stakeholders which sometimes have conflicting interests.

The SAQA act is an example of enabling legislation; it does not hand down a blueprint from 'on high' but rather enables the development of the NQF as a social construct whose meaning has been, and will continue to be, negotiated by the people for the people. It is a synthesis of the experience, thinking and practice of South Africans from a variety of socio-economic backgrounds representing a variety of world-views. The cornerstones of this construct are democratic participation, intellectual scrutiny and the availability of resources, notions central to SAQA's development and implementation of the NQF.

Annex 10 Selected qualification systems

The following table provides an overview of the Danish Qualification system according to reference levels and educational areas following the ISCED classification.

Figure 9: The Danish general educational qualification system

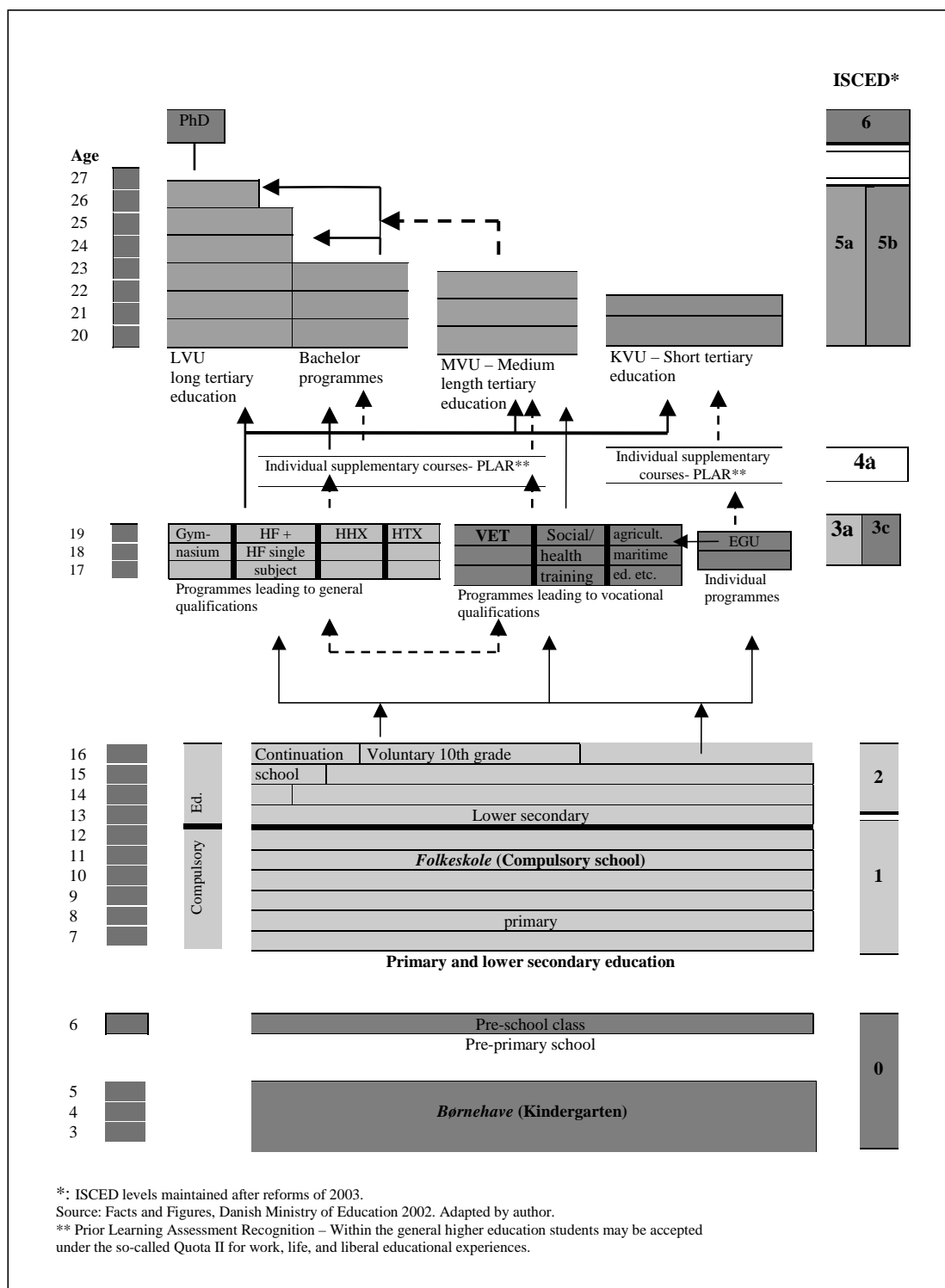
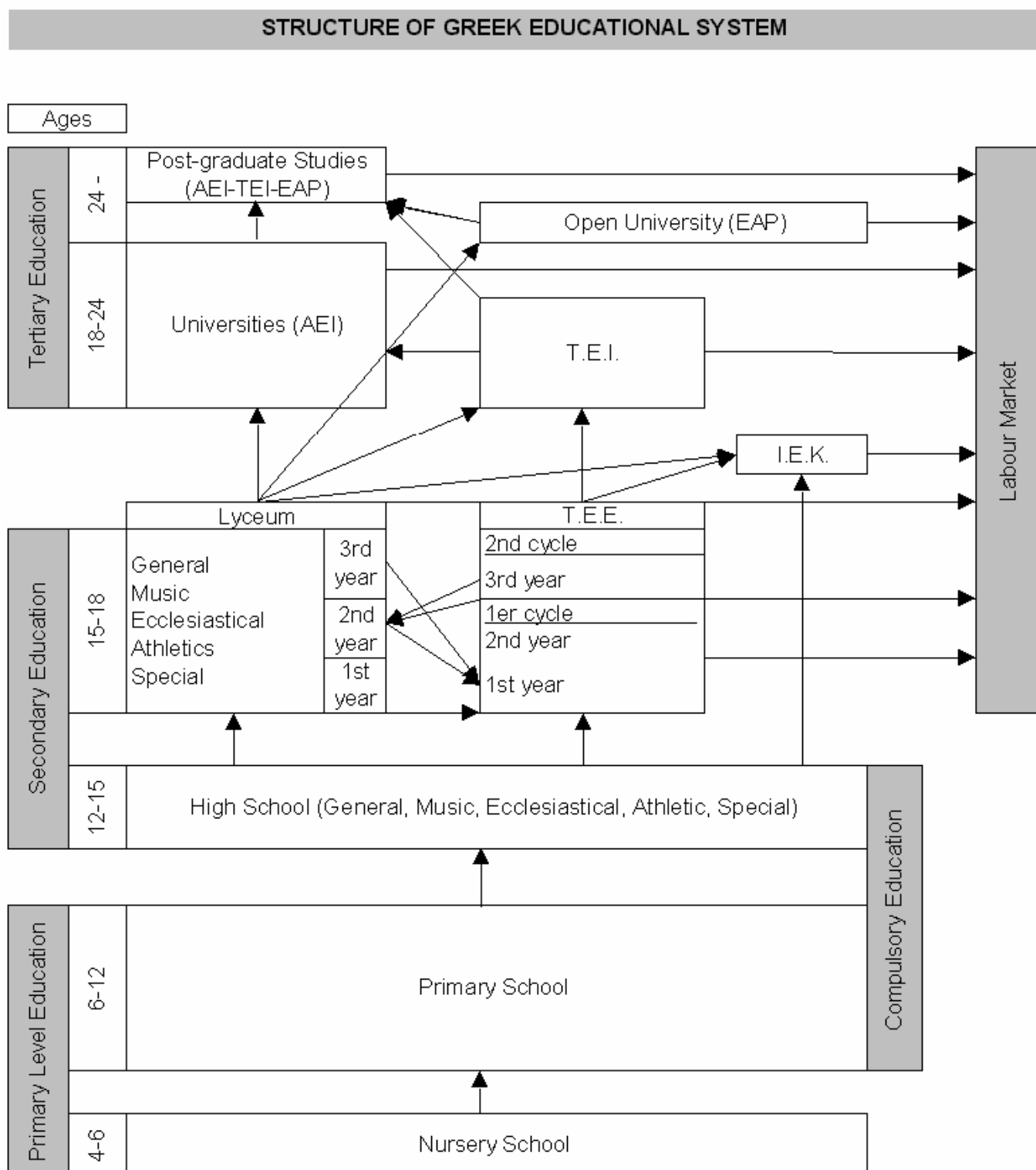


Table 10: Japan's skill test grades

Grade	Level of skill and associated knowledge needed to pass		Main eligibility requirements	Person awarding pass certificate
Special grade	Level of skill and associated knowledge normally required by a manager or supervisor		Persons with at least 5 years of work experience after passing 1st grade skill test	Minister of Health, Labour and Welfare
1st grade	Level of skill and associated knowledge normally required by an upper grade skilled worker		Persons with at least 12 years of work experience	Minister of Health, Labour and Welfare
2nd grade	Level of skill and associated knowledge normally required by a middle grade skilled worker		Persons with at least 3 years of work experience	Prefectural governor or designated testing body
3rd grade	Level of skill and associated knowledge normally required by an elementary grade skilled worker		Persons with at least 1 year of work experience	Prefectural governor or designated testing body
3rd grade (Occasional)	A grade designed for foreign trainees and technical interns	Level of skill and associated knowledge normally required by an elementary grade skilled worker	Persons with at least 1 year of work experience	Prefectural governor
Elementary 1st grade		Level of skill and associated knowledge needed to perform basic work	Persons with at least 8 months of work experience	Prefectural governor
Elementary 2nd grade		Level of basic skill and associated knowledge needed to perform basic work	Persons with at least 4 months of work experience	Prefectural governor
Single grade	Level of skill and associated knowledge normally required by an upper grade skilled worker		Persons with at least 3 or 5 years of work experience, depending on the trade	Minister of Health, Labour and Welfare

Figure 10: The Greek educational system



Bibliography

Adam, Stephen. A pan-European credit accumulation framework: dream or disaster? *Higher Education Quarterly*, 2001, Vol. 55, No 3, p. 292-305.

Adam, Stephen. *Qualifications structures in European higher education: alternative approaches for clarifying cycles and levels in European higher education qualifications*. Paper presented to the Bologna seminar held in Copenhagen, 2001.

Bagnall, Nigel. The balance between vocational secondary and general secondary schooling in France and Australia. *Comparative Education*, 2000, Vol. 36, No 4. p. 459-475.

Baillie, Caroline; Fitzgerald Geraldine. Motivation and attrition in engineering students. *European Journal of Engineering Education*, 2000, Vol. 25, No 2, p.145-155.

Barblan, Andris et al. *Implementing European strategies in universities: the Socrates experience*. Kassel: Centre of Research on Higher Education and Work, 2000.

Bergan, Sjur; Divis, Jindra; Rauhargers, Andrejs. Bridges over troubled waters: Bologna and the recognition of qualifications. *Journal of Studies in International Education*, 2000, Vol. 4, No 2, p. 11-20.

Bottomley, David. *The Scottish credit accumulation and transfer framework: an organising framework for higher education in Scotland*. Scotland: HEQC Scottish Office, 1996.

Brandt, Ellen. Lifelong learning in Norwegian universities. *European Journal of Education*, 2001, Vol. 36, No 3, p. 265-276.

Brennan, John; Shah, Tarla. Quality assessment and institutional change: experiences from 14 countries. *Higher Education*, 2000, Vol. 40, No 3, p. 331-349.

Brown, Alan; Bjornavold, Jens. *Prospects for mutual learning and transnational transfer of innovative practice in European vocational education and training*. London: Kluwer Academic Publishers, 2000. Available from Internet: <http://www2.trainingvillage.gr/download/ero/BroAl01.rtf> [cited 24.01.2005].

Brown, Alan; Keep, Ewart. *International comparisons of how well initial vocational education and training facilitates lifelong learning: a UK perspective*. Paper presented at the third international JNET conference at the Bolton Institute, United Kingdom, 14-16 July 1999. Available from Internet: <http://www.leeds.ac.uk/educol/documents/000001135.htm> [cited 24.01.2005].

Canning, Ray; Cloonan, Martin. The 'home international' comparisons in vocational qualifications. *Comparative Education*, 2002, Vol. 38, No 2, p. 189-209.

Canny, Angela. The transition from school to work: an Irish and English comparison. *Journal of Youth Studies*, 2001, Vol. 4, No 2, p. 133-154.

Cedefop. *Curriculum development guidelines: new ICT curricula for the 21st century: designing tomorrow's education*. Luxembourg: Office for Official Publications of the European Communities, 2001. (Career Space - Future skills for tomorrow's world). Available from Internet: http://www2.trainingvillage.gr/download/publication/panorama/2204/2204_en.pdf [cited 24.01.2005].

Chou, Shoh-Liang; Ven, Hun; Tien, Chen-Jung. *The development of competence standards for industrial vocational high school students in Taiwan*. Luxembourg: Office for Official Publications of the European Communities, 2001.

Clayton, Pamela. Was it worth it? Gender boundaries and the role of adult education in labour market progress. *International Journal of Lifelong Education*, 2000, Vol. 18 No 3, p. 199-214.

Cockrill, Antje. *More than the dual system: vocational education and training in Germany*. Draft paper presented at the learning society symposium, BERA annual conference, held at the University of York, 11-14 September 1997.

Cockrill, Antje. *Vocational education and training in Germany: the dual system and stage training*. Paper presented at the BERA annual conference, held at the University of York, 11-14 September 1997.

Coles, Mike. *Evaluating the impact of reforms of vocational education and training: examples of practice*. Luxembourg: Office for Official Publications of the European Communities, 2004.

Coles, Mike; Collar, Debbie. *The currency of qualifications today*. London: QCA, 2003. (QCA research paper).

Cook, Anthony. Testing the water: practitioner opinion of a regional credit scheme (NICATS). *Higher Education Quarterly*, 2001, Vol. 55, No 3, p. 239-256.

Council of Europe. *Common European framework of reference for languages; learning, teaching, assessment*. Cambridge: Cambridge University Press, 2001. Available from Internet: <http://culture2.coe.int/portfolio//documents/0521803136txt.pdf> [cited 24.01.2005].

Davies, Pat. Widening participation and the EU: direct action – indirect policy? *European Journal of Education*, 2003, Vol. 38, No 1, p. 99-116.

Deane, Cynthia; Watters, Elizabeth. *Towards 2010: common themes and approaches across higher education and vocational education and training*. Dublin: National Qualifications Authority of Ireland, 2004.

Deissinger, Thomas. Current problems and developments of VET in Germany: the educational case for modernisation. *Australian Journal of Adult Learning*, 2000, Vol. 40, No 2, p. 5-32.

Deissinger, Thomas. *Modularisation and flexibility within German VET*. Paper presented at the JVET conference at Wolverhampton, United Kingdom, 16-18 July 2001.

Dekker, Ron; de Grip, Andries; Heijke, Hans. The effects of training and over education on career mobility in a segmented labour market. *International Journal of Manpower*, 2002, Vol. 23, No 2, p. 106-125.

Delisle, Gilles; Ryan-Bacon, Wendy. Recognition of substantial equivalence of engineering competence: the Canada-France mutual recognition agreement. *European Journal of Engineering Education*, 2001, Vol. 26, No 3, p. 219-230.

Denning, Peter. The profession of IT: how can one design a career when career as an institution is dead? Entrepreneurs have an answer. *Communications of THEACH*, 2002, Vol. 45, No 9, p. 22-26. Available from Internet: <http://cne.gmu.edu/pjd/PUBS/CACMcols/cacmSep02.pdf> [cited 24.01.2005].

DfEE. *A common framework for learning: InCCA - Inter-Consortium Credit Agreement project final report*. London: Department for Education and Skills, 1998. Available from Internet: <http://www.nicats.ac.uk/doc/INCCA.pdf> [cited 24.01.2005].

Di Francesco, Gabriella. *Certification and recognition of competences and credits in Italy towards lifelong learning*. Mimeograph, 2004.

Dif, M'Hamed. Accreditation of experiential learning in France: evaluation and perspectives. In Manning, Sabine; Griffiths, Toni; Oliveria, Teresa (eds). *VETNET ECER 2002 proceedings*. Berlin: Wissenschaftsforum Bildung und Gesellschaft e.V, 2002. Available from Internet: <http://www2.trainingvillage.gr/download/ero/DifMh03.rtf> [cited 24.01.2005].

Dif, M'Hamed. *Competence assessment and accreditation for an integrated formal and non-formal learning: a French perspective*. Paper presented at JVET Fourth International Conference, 16-18 July 2001, University of Wolverhampton, UK. Available from Internet: <http://www.leeds.ac.uk/educol/documents/00001784.htm> [cited 24.01.2005].

Donoghue, Judith [et al.]. Recognition of prior learning as university entry criteria in successful postgraduate nursing students. *Innovations in Education and Teaching International*, 2002, Vol. 39, No 1, p. 54-62.

Dreyfus Hubert; Dreyfus Stuart. *Mind over machine*. New York: The Free Press, 1986.

Dreyfus, Hubert. *What computers still can't do: a critique of artificial reason*. Cambridge, MA: MIT Press, 1992.

Elais, Peter; Birch, Margaret. *Establishment of community-wide occupational statistics: ISCO-88: a guide for users*. Warwick: Institute for Employment Research, 1994.

European Council. Council Decision of 16 July 1985 on the comparability of vocational training qualifications between the Member States of the European Community. *Official Journal of the European Communities*, 1985, L 199, p. 56-59 [known as : The European five-level framework]. Available from the Internet: http://europa.eu.int/smartapi/cgi/sga_doc?smartapi!celexplus!prod!CELEXnumdoc&lg=en&numdoc=31985D0368 [cited 24.01.2005]

European Council. *Presidency conclusions: Barcelona, European Council, 15-16 March 2002*. Brussels: European Council, 2002. Available from Internet: http://ue.eu.int/ueDocs/cms_Data/docs/pressData/en/ec/71025.pdf [cited 24.01.2005].

Evans, Linda. The effects of educational change on morale, job satisfaction and motivation. *Journal of Educational Change*, 2000, Vol. 1, No 2, p.173-192.

Fulton, John. *Transferable skills in an unlikely area*. Paper presented at the BERA annual conference. Edinburgh: Heriot-Watt University, 11-13 September 2003. Available from Internet: <http://brs.leeds.ac.uk/~beiwww/beid.html> [cited 24.01.2005].

Further Education Unit. *A framework for credit: common framework for post-16 education and training for the twenty-first century*. London: FEU, 1995.

Gosling, David. Lost opportunity: what a credit framework would have added to the national qualification frameworks. *Higher Education Quarterly*, 2001, Vol. 55, No 3, p. 270-284.

Green, Andy. *Education, globalization and the nation state*. London: MacMillan, 1997.

Haakstad, Jon. Accreditation: the new quality assurance formula? Some reflections as Norway is about to reform its quality assurance system. *Quality in Higher Education*, 2001, Vol. 7, No 1, p. 77-82.

Healy, Tom. Lifelong learning for all: international experience and comparisons. *Lifelong learning in Europe, Adult and Continuing Education Quarterly*, 1997, Vol. 2, No 3, p. 170-177.

International Labour Office. *ISCO-88: International standard classification of occupations*. Geneva: International Labour Office, 1990. Available from Internet: <http://www.ilo.org/public/english/bureau/stat/class/isco.htm> [cited 24.01.2005].

Jacobs, Pam; Newstead, Steve. The nature and development of student motivation. *British Journal of Educational Psychology*, 2000, Vol. 70, No 2, p. 243-254.

Jaques, Elliott. *Requisite organisation*. 2nd ed. Gloucester, MA: Cason Hall, 1973/1996.

Jefferies, Derek; Evetts, Julia. Approaches to the international recognition of professional qualifications in engineering and the sciences. *European Journal of Engineering Education*. 2000, Vol. 25, No 1, p. 99-107.

Kivinen, Osmo; Nurmi, Jouni. Unifying higher education for different kinds of Europeans: higher education and work: a comparison of 10 countries. *Comparative Education*. 2003, Vol. 9, No 1, p. 83-104.

Koniordos, Sokratis [et al.]. *Changing vocational identities in Europe: reflections on how vocational identities are decomposed and reconstructed from the Czech Republic and Greece*. Paper presented at fourth international conference 'vocational education and training research', University of Wolverhampton, 16-18 July 2001.

Konrad, John. *Toward a European credit accumulation system for lifelong learning*. Paper developed in 2003 from a presentation given at Caen, November 2001. 'Bilan de competences et mutations: l'accompagnement de la personne'. Available from Internet: <http://www.leeds.ac.uk/educol/documents/00003128.htm> [cited 24.01.2005].

Lester, Stan. The construction of qualifications levels and frameworks: issues from 3 UK projects. *Higher Education Quarterly*, 2001, Vol. 55, No 4, p. 396-415.

Malley, Jeff; Keating, Jack. Policy influences on the implementation of vocational education and training in Australian secondary schools. *Journal of Vocational Education and Training*, 2000, Vol. 52, No 4, p. 627-652.

Mason, Terence; Arnove, Robert; Sutton, Margaret. Credits, curriculum and control in higher education: cross-national perspectives. *Higher Education*, 2001, Vol. 42, No 1, p. 107-137.

McBeath, Clare. *A matter of change? VET reform in Australia, summary of a presentation at the 3rd international conference 'researching vocational education and training'*. Bolton Institute, July 14-16 1999. Available from Internet: <http://www.leeds.ac.uk/educol/documents/000001033.htm> [cited 24.01.2005].

Millar, Clive. Boundaries and quality: towards a national qualification framework for education, training and development practitioners in South Africa. In *Crossing borders, breaking boundaries: research in the education of adults. Proceedings of 27th annual SCUTREA conference*, 1997, p. 300-304.

Miller, Linda; Acutt; Bruce. Factors influencing the choice of initial qualifications and continuing development in Australia and Britain. *International Journal of Training and Development*, 2001, Vol. 5, No 3, p. 196-222.

Mora, Jose-Gines. Lifelong learning policies in Spanish Universities. *European Journal of Education*. 2001, Vol. 36, No 3, p. 317-327.

Mucke, Kerstin; Grundwald, Stefan. Leistungspunktesystem in der beruflichen Weiterbildung: Bereich IT. In *IT Weiterbildung mit System*, chapter 7. Bonn: BMBF, 2002. Available from Internet: http://www.bmbf.de/pub/it-weiterbildung_mit_system.pdf [cited 24.01.2005].

Murray, Asa; Steedman, Hilary. *Growing skills in Europe: the changing skill profiles of France, Germany, the Netherlands, Portugal, Sweden and the United Kingdom*. London: Centre for Economic Performance, 1998.

Musselin, Christine. Diversity around the profile of the 'good' candidate within French and German universities. *Tertiary Education and Management*, 2002, Vol. 8, No 3, p. 243-258.

NICATS. *Designing learning programmes: a credit-based approach: a practical manual*. Belfast: Northern Ireland Credit Accumulation and Transfer System, 2002.

NQAI. *Irish presidency conference: towards 2010: common themes and approaches across higher education and vocational education and training in Europe*. Dublin: National Qualifications Authority of Ireland, 2004.

NQAI. *Outline national framework of qualifications: determinations made by the national qualifications authority of Ireland*. Dublin: National Qualifications Authority of Ireland, 2003.

OECD. *Classifying educational programmes: manual for ISCED-97 implementation in countries*. Paris: OECD, 1999.

OECD. *Measuring what people know*. Paris: OECD, 1996.

OECD. *The role of qualifications in lifelong learning*. Paris: OECD, 2003.

Postle, Karen [et al.]. Continuing professional development after qualification: partnerships, pitfalls and potential. *Social Work Education*, 2002, Vol. 21, No 2. p. 157-169.

QCA. *Evaluation of the English, Welsh and Northern Irish national qualification framework*. London: Qualifications and Curriculum Authority, 2001.

QCA. *National qualifications frameworks: international comparison*. London: Qualifications and Curriculum Authority, 2001. (QCA working paper).

Raffe, David. Simplicity itself: the creation of the Scottish credit and qualifications framework. *Journal of Education and Work*, 2003, Vol. 16, No 3, p. 239 – 257.

Rakic, Voijin. Converge or not converge: the EU and the policies in the Netherlands, Belgium/Flanders and Germany. *Higher Education Policy*, 2001, Vol. 14, No 3, p. 225-240.

Reynolds, Sonia. The Welsh credit vision. *Higher Education Quarterly*, 2001, Vol. 55, No 3, p. 285-291.

Rocher, Falk; Sachs, Anglika. *Credit-Rahmenwerk für die Fachhochschulen in Baden-Württemberg*. Alsbach/Bergstrasse: Leuchttum-Verlag, 1999. (Schriftenreihe Report, 37).

SAQA. *South African qualifications framework*. Pretoria: South African Qualifications Authority. Available from Internet: <http://www.saqqa.org.za> [cited 24.01.2005].

Scottish Qualifications Authority. *Scottish credit and qualifications framework: SCQF handbook: working draft*. Glasgow: SQA, 2003. Available from Internet: <http://www.scqf.org.uk/upload/downloads/Handbookfinal%20website%20version%20pdf%20June%202003.pdf> [cited 24.01.2005].

Sellin, Burkart. *Scenarios and strategies for vocational education and lifelong learning in Europe: summary of findings and conclusions of the joint Cedefop/ETF project*. Luxembourg: Office for Official Publications of the European Committees, 2002. (Cedefop Panorama, 40). Available from Internet: http://www2.trainingvillage.gr/etv/publication/download/panorama/5131_en.pdf [cited 24.01.2005].

Sellin, Burkart; Heitmann, Günter. *European structures of qualification levels: reports on recent developments in Germany, Spain, France, The Netherlands and in the United Kingdom (England & Wales): volume 3*. Luxembourg: Office for Official Publications of the European Communities, 2001. Available from Internet: <http://www2.trainingvillage.gr/download/publication/panorama/5116env3.pdf> [cited 24.01.2005].

Shapiro, Hanne. *Example of zones of mutual trust within the Nordic countries*. E-mail correspondence to the QCA research team. London: QCA, 2004.

Shapiro, Hanne. *The upper secondary vocational education and training system (I-VET)*. Copenhagen: Danish Technological Institute, 2003.

Sullivan, Kirk. Credit and grade transfer within the EU's Socrates programme: unity in diversity or head in the sand? *Assessment and Evaluation in Higher Education*, 2002, Vol. 27, No 1, p. 65-74.

Taylor, Tony; Clemans, Allie. Avoiding the hoops: a study of recognition of prior learning processes in Australian faculties of education. *Asia-Pacific Journal of Teacher Education*, 2000, Vol. 28, No 3, p. 263-280.

The Curriculum Development Guidelines. *New ICT curricula for the 21st century: designing tomorrow's education*. Luxembourg: Office for Official Publications of the European Communities, 2002.

Unesco. *International Standard Classification of Education, ISCED-97*. Paris: Unesco, 1997. Available from Internet: http://www.uis.unesco.org/TEMPLATE/pdf/isced/ISCED_A.pdf [cited 24.01.2005].

Van Damme, Dirk. Quality issues in the internationalisation of higher education. *Higher Education*, 2001, Vol. 41, No 4, p. 415-441.

Van der Pas, Nikolaus. *Irish Presidency: conference on common themes and approaches across HE and VET in Europe, 8 March 2004: conclusions of N Van der Pas, Director General DG Education and Culture, European Commission*. Available from Internet: <http://www.nqai.ie/vdpconclusions.doc> [cited 24.01.2005].

Warmington, Paul. You need a qualification for everything these days: the impact of work, welfare and disaffection upon the aspirations of access to higher education students. *British Journal of Sociology of Education*, 2003, Vol. 24, No 1, p. 95-107.

West, John. Higher education and employment: opportunities and limitations in the formation of skills in a mass higher education system. *Journal of Vocational Education and Training*, 2000, Vol. 52, No 4, p. 573-588.

Wheelahan, Leesa; Carter, Richard. National training packages: a new curriculum framework for vocational education and training in Australia. *Education and Training*, 2001, Vol. 43, No 6, p. 303-316.

Wood, G. *The role of the government in the establishment, accreditation and quality assurance of universities: a comparative international study of the Netherlands, the United Kingdom, the USA, New Zealand and Australia*. Paper presented at Higher Education Close-Up2, an International Qualitative Research in Higher Education Conference, Lancaster University, 16-18 July, 2001. Available from Internet: <http://www.leeds.ac.uk/educol/documents/00001760.htm> [cited 24.01.2005].

Young, Michael [et al.]. National qualifications frameworks: an international and comparative approach. *Journal of Education and Work*, 2003, Vol. 16, No 3 [special issue on NQF].

Zahilas, L. *Examples of zones of mutual trust in place in Greece*. E-mail correspondence to the QCA research team. London: QCA, 2004.

Selected annotated bibliography

Adam, Stephen. A pan-European credit accumulation framework: dream or disaster? *Higher Education Quarterly*, 2001, Vol. 55, No 3, p. 292-305.

Considers the potential for the European Credit Transfer System (ECTS) to be developed into a credit accumulation and transfer system for European Education. Highlights the advantages of such a system, including increased transparency, mobility, recognition (particularly of lifelong learning) and ease of access to the European labour market. Also covers the obstacles such a system may face.

Baillie, Caroline; Fitzgerald Geraldine. Motivation and attrition in engineering students. *European Journal of Engineering Education*, 2000, Vol. 25, No 2, p.145-155.

Looks at the motivation levels of students and what causes them to drop out; how could the college help more? States that employers want 'adoptive recruits', and that they want graduates to be able to demonstrate that they have the 'ability to be creative and innovative'.

Bergan, Sjur; Divis, Jindra; Rauhargers, Andrejs. Bridges over troubled waters: Bologna and the recognition of qualifications. *Journal of Studies in International Education*, 2000, Vol. 4, No 2, p. 11-20.

Reviews achievements in recognising qualifications in Higher Education across Europe. Highlights the shifting emphasis from equating curricula to considering skills and competences. Puts forward hypotheses for progressing recognition and mobility including: assessment moving towards outcome and competence based, an increase in the number of applications for recognition of non-traditional qualifications, and recognition becoming a more important issue for the labour market.

Bottomley, David. *The Scottish credit accumulation and transfer framework: an organising framework for higher education in Scotland*. Scotland: HEQC Scottish Office, 1996.

Glasgow Universities' credit and unitisation processes.

Brown, Alan; Bjornavold, Jens. *Prospects for mutual learning and transnational transfer of innovative practice in European vocational education and training*. London: Kluwer Academic Publishers, 2000. Available from Internet: <http://www2.trainingvillage.gr/download/ero/BroA101.rtf> [cited 24.01.2005].

Considers the merits of broadening the concept of 'key skills' in vocational education in the United Kingdom and the application of the Dutch notion of 'core problems' to the United Kingdom system. Also explores methods of recognising informal education. Focuses on the systems of Germany, Norway and Holland which recognise informal learning by assessing it through the formal system and the French system which focuses on labour market and enterprise.

Brown, Alan; Keep, Ewart. *International comparisons of how well initial vocational education and training facilitates lifelong learning: a UK perspective*. Paper presented at the third international JNET conference at the Bolton Institute, United Kingdom, 14-16 July 1999. Available from Internet: <http://www.leeds.ac.uk/educol/documents/000001135.htm> [cited 24.01.2005].

Highlights workers' need for new skills in the ever-changing workplace, but reports that the United Kingdom employers have a low demand for skills compared internationally. Hypothesises that this may be indicative of the restricted and narrower VET received in the United Kingdom. Emphasises the need for flexibility and engagement in learning through VET.

Canning, Ray; Cloonan, Martin. The 'home international' comparisons in vocational qualifications. *Comparative Education*, 2002, Vol. 38, No 2, p. 189-209.

Comparative analysis of take-up and use of national vocational qualifications in Scotland and England. Includes analysis of regional variations in take-up and argues that this may be more informative than analysis across nations. Reports that take up of NVQs in England is higher than that of SVQs in Scotland, but highlights that this may be explained by the higher number of competing vocational qualifications in Scotland. Considers factors affecting employer take-up. Highlights that awareness and participation increase with employer size. Includes four case studies of N/SVQ providers which bring to light the fact that employers perceive NVQs to be nationwide qualifications although in many cases they are the same as the equivalent SVQs.

Clayton, Pamela. Was it worth it? Gender boundaries and the role of adult education in labour market progress. *International Journal of Lifelong Education*, 2000, Vol.18, No 3, p. 99-214.

Findings show that lower class adults are returning to education to help them find employment.

Cockrill, Antje. '*More than the dual system*': vocational education and training in Germany, (1997), draft paper presented at the Learning Society Symposium, BERA Annual Conference, held at the University of York, 11-14 September 1997. Paper available from <http://brs.leeds.ac.uk/~beiwww/beid.html>.

Breakdown of the training given in the care and construction industries. Costs of training apprentices; negative points to the dual system and the need for more flexibility.

Cockrill, Antje. *Vocational education and training in Germany: the dual system and stage training*. Paper presented at the BERA annual conference, held at the University of York, 11-14 September 1997.

Costs of training apprentices. Negative points to the dual system, therefore the need for more flexibility.

Deissinger, Thomas. Current problems and developments of VET in Germany: the educational case for modernisation. *Australian Journal of Adult Learning*, 2000, Vol. 40, No 2, p. 5-32.

Highlights disadvantages in the system for low achievers and the need for more flexibility for these learners, e.g. shorter training contracts.

Deissinger, Thomas. *Modularisation and flexibility within German VET*. Paper presented at the JVET conference at Wolverhampton, United Kingdom, 16-18 July 2001.

Compares the dual system in Germany to S/NVQs. Looking to the United Kingdom system to see how the German system could be updated.

Dekker, Ron; de Grip, Andries; Heijke, Hans. The effects of training and over education on career mobility in a segmented labour market. *International Journal of Manpower*, 2002, Vol. 23, No 2, p. 106-125.

Describes the labour market in terms of three sectors, the types of training used in each and the effect of this training and over education on upward mobility in each labour market sector. Makes some hypotheses to this affect and tests them using empirical analysis.

Delisle, Gilles; Ryan-Bacon, Wendy. Recognition of substantial equivalence of engineering competence: the Canada-France mutual recognition agreement. *European Journal of Engineering Education*, 2001, Vol. 26, No 3, p. 219-230.

Details the bilateral agreement between France and Canada to facilitate mutual recognition of their respective engineering systems. Details how they overcome barriers such as the differing education and professional systems by working towards universal criteria for recognition.

Dif, M'Hamed. Accreditation of experiential learning in France: evaluation and perspectives. In Manning, Sabine; Griffiths, Toni; Oliveria, Teresa (eds). *VETNET ECER 2002 proceedings*. Berlin: Wissenschaftsforum Bildung und Gesellschaft e.V, 2002. Available from Internet: <http://www2.trainingvillage.gr/download/ero/DifMh03.rtf> [cited 24.01.2005].

Explores the workings of the French accreditation of experiential learning system, the *Validation de Acquis de l'Expérience* (VAE). Explains how it enables individuals to qualify in a profession and access formal and informal learning through work, social and cultural experience. Assesses the system's success in meeting its objectives of increasing fluidity between formal and non-formal learning and enhancing participant's lifelong learning, employability, flexibility, mobility and socio-professional promotion in general.

Dif, M'Hamed. *Competence assessment and accreditation for an integrated formal and non-formal learning: a French perspective*. Paper presented at JVET Fourth International Conference, 16-18 July 2001, University of Wolverhampton, UK. Available from Internet: <http://www.leeds.ac.uk/educol/documents/00001784.htm> [cited 24.01.2005].

Considers the functioning and implications of France's two systems designed to integrate informal learning into formal. (The *Bilan de Compétences* (BC), and the *Validation des Acquis Professionnels* (VAP)).

Donoghue, Judith [et al.]. Recognition of prior learning as university entry criteria in successful postgraduate nursing students. *Innovations in Education and Teaching International*, 2002, Vol. 39, No 1, p. 54-62.

Describes a study where nurses qualified by either an undergraduate qualification or recognition of prior learning entered the same postgraduate nursing programme. Results of the study showed academic achievement was similar through both routes. (Australian study).

Evans, Linda. The effects of educational change on morale, job satisfaction and motivation. *Journal of Educational Change*, 2000, Vol. 1, No 2, p.173-192.

Looks at teacher motivation.

Fulton, John. *Transferable skills in an unlikely area*. Paper presented at the BERA annual conference. Edinburgh: Heriot-Watt University, 11-13 September 2003. Available from Internet: <http://brs.leeds.ac.uk/~beiwww/beid.html> [cited 24.01.2005].

Review of the skills learned in boxing being used in other contexts.

Gosling, David. Lost opportunity: what a credit framework would have added to the national qualification frameworks. *Higher Education Quarterly*, 2001, Vol. 55, No 3, p. 270-284.

Qualification versus credit accumulation frameworks. SEEC (South England Consortium), a major source of expertise on credit-based learning structures campaign for a credit accumulation framework for HE. Argues such a framework would transform and democratise HE by enabling it to become more open, flexible and responsive to students and improve access to lifelong learning.

Healy, Tom. Lifelong learning for all: international experience and comparisons. *Lifelong Learning in Europe, Adult and Continuing Education Quarterly*, 1997, Vol. 2, No 3, p. 170-77.

Review of barriers to learning; mainly United Kingdom focus with some international comparisons.

Jacobs, Pam; Newstead, Steve. The nature and development of student motivation. *British Journal of Educational Psychology*, 2000, Vol. 70, No 2, p. 243-254.

Statistical look at the motivation of students for their degree courses; those with an interest in the discipline and its associated skills and others relating to the general skills and experiences which can be obtained while at university.

Jefferies, Derek; Evetts, Julia. Approaches to the international recognition of professional qualifications in engineering and the sciences. *European Journal of Engineering Education*. 2000, Vol. 25, No 1, p. 99-107.

Considers the developing need for international recognition of professional qualifications in science and engineering to facilitate mobility. Considers the subject specific registers run by the international subject federations and general directives issued by the European Commission and problems encountered. Argues the directives as legal arrangements are too static and that it is the responsibility of the international subject federations to provide a more dynamic approach to recognition.

Kivinen, Osmo; Nurmi, Jouni. Unifying higher education for different kinds of Europeans: higher education and work: a comparison of 10 countries. *Comparative Education*. 2003, Vol. 9, No 1, p. 83-104.

Analyses several significant differences between HE systems across Europe (including the relevance of education to working life). Reports that HE policy in each individual country has evolved distinctively as a result of cultural, social and economic circumstance as well as in response to individual problems which have arisen in its development and that these factors must be taken into account when developing pan-European HE policy. Highlights contradiction in trying to standardise HE policy across Europe when demand for education and graduate employment continues to diversify. Countries included in study: Austria, England, Finland, France, Germany, Italy, the Netherlands, Norway, Spain, Sweden.

Koniordos, Sokratis [et al.]. *Changing vocational identities in Europe: reflections on how vocational identities are decomposed and reconstructed from the Czech Republic and Greece*. Paper presented at fourth international conference 'vocational education and training research', University of Wolverhampton, 16-18 July 2001.

Looks at changes in vocational apprenticeships over time. International comparisons, identity in the workplace.

Lester, Stan. The construction of qualifications levels and frameworks: issues from 3 UK projects. *Higher Education Quarterly*, 2001, Vol. 55, No 4, p. 396-415.

Traces the history of qualification frameworks within the United Kingdom then focuses on three UK projects. Project 1: considers a qualification designed to assess professional practice and the difficulties in integrating it into frameworks designed to recognise qualifications which assess declarative or espoused knowledge. Project 2: problems encountered when trying to fit work-based learning into existing frameworks. Development of framework for work-based learning. Project 3: QCA's higher levels project. Problems encountered when integrating two frameworks which developed independently. Issues concerned with allocation of levels to qualifications. Equation of totally different qualifications.

Mason, Terence; Arno, Robert; Sutton, Margaret. Credits, curriculum and control in higher education: cross-national perspectives. *Higher Education*, 2001, Vol. 42, No 1, p. 107-137.

Investigates the implementation of credit-systems in Indonesia, Nicaragua and Vietnam. Themes which emerge through all three studies include: financial donor's influence on educational policy and ethical implications, the existence of credit-systems' dependency on political and global economy changes, resistance to reforms, lack of stakeholder involvement. Argues that credit-based systems are brought about by capitalist, market-based economic systems and that they lead to an increased commodification of the education sector. Country specific issues include:

Indonesia: credit system and guided study originally introduced to increase degree completion rates and internal efficiency. Commonly regarded advantages of credit systems, such as increased choice and flexibility were not observed since curriculum remained restricted.

Nicaragua: in the 1950s Nicaragua experienced increased exports. Therefore in the 1960s reforms were implemented to bring higher education in line with regional economic development. There were strong financial incentives from the US to model new system on that of the US (credit-based systems). Despite initial problems the system had some success in the 1990s when institutions were given greater autonomy.

Vietnam: in the 1990s reforms were made to the Vietnamese education system to facilitate participation in the world market. A credit based system was implemented, however there were inconsistencies between credit system and socialist-based market economy in Vietnam. There were also contradictions between implemented credit system and changes in teaching styles - prohibiting innovation, i.e. giving lectures highest credit when trying to promote alternative teaching methods.

McBeath, Clare. *A matter of change? VET reform in Australia, summary of a presentation at the 3rd international conference 'researching vocational education and training'*. Bolton Institute, July 14-16 1999. Available from Internet: <http://www.leeds.ac.uk/educol/documents/000001033.htm> [cited 24.01.2005].

Reform of the curriculum of VET i.e., increasing modularisation and flexibility of training courses.

Millar, Clive. Boundaries and quality: towards a national qualification framework for education, training and development practitioners in South Africa. In *Crossing borders, breaking boundaries: research in the education of adults. Proceedings of 27th annual SCUTREA conference*, 1997, p. 300-304.

Framework of 'teachers' rather than qualifications.

Miller, Linda; Acutt; Bruce. Factors influencing the choice of initial qualifications and continuing development in Australia and Britain. *International Journal of Training and Development*, 2001, Vol. 5, No 3, p. 196-222.

Survey results and analyses exploring the factors which influence training and development decisions at different career stages. Investigates whether these factors vary with type and level of qualification. Considers the differences exhibited between Britain and Australia, and also between males and females.

Murray, Asa; Steedman, Hilary. *Growing skills in Europe: the changing skill profiles of France, Germany, the Netherlands, Portugal, Sweden and the United Kingdom*. London: Centre for Economic Performance, 1998.

Very brief paper looking at the ISCED levels held by people with 'low skills' in relation to age and gender.

Sullivan, Kirk. Credit and grade transfer within the EU's Socrates programme: unity in diversity or head in the sand? *Assessment and Evaluation in Higher Education*, 2002, Vol. 27, No 1, p. 65-74.

Examines the credit and grade cross-crediting mechanism for SOCRATES: the ECTS (European credit transfer system). Questions whether it is an oversimplified approach in that it fails to acknowledge fundamental differences in the educational and assessment cultures of European countries.

Warmington, Paul. You need a qualification for everything these days: the impact of work, welfare and disaffection upon the aspirations of access to higher education students. *British Journal of Sociology of Education*, 2003, Vol. 24, No 1, p. 95-107.

Mature students on returning to education via access higher education courses. The students characterised qualifications as 'cultural-capital passports into education and work' and a belief that the value of qualifications within the labour market has intensified.

Websites investigated

Searches through official ministry of education websites

Australia

Australian Government: Australian Research Council

<http://www.arc.gov.au/>

Australian Government: Department of Education, Science and Training

<http://www.dest.gov.au/>

Denmark

Danish Ministry of Education

<http://www.uvm.dk/>

Finland

Ministry of Education, Finland

<http://www.minedu.fi/>

The Finnish Higher Education Evaluation Council

<http://www.kka.fi/english/index.lasso?cont=english>

France

Ministère Jeunesse Education Recherche

<http://www.education.gouv.fr/>

Germany

Federal Ministry of Education and Research

<http://www.bmbf.de/>

Ireland

Department of Education and Science

<http://www.irlgov.ie/educ>

Italy

Ministero dell Istruzione, dell Università e della Ricerca

<http://www.miur.it/>

Japan

Ministry of Education, Culture, Sports, Science and Technology

<http://www.mext.go.jp/english/index.htm>

Netherlands

Education, Culture and Science in the Netherlands

<http://www.minocw.nl/>

New Zealand

Ministry of Education

<http://www.minedu.govt.nz/>

New Zealand Council for Educational Research

<http://www.nzcer.org.nz/>

New Zealand Qualifications Authority

<http://www.nzqa.govt.nz/>

Tertiary Education Commission

<http://www.tec.govt.nz/>

South Africa

South African Government: Department of Education (DoE)

<http://education.pwv.gov.za>

Sweden

The Association of Swedish Higher Education

<http://www.suhf.se/>

Switzerland

Federal Office for Education and Science

<http://www.admin.ch/bbw>

General websites considered

BBC Online

<http://news.bbc.co.uk/>

BVE Council, Association of the Regional Training Centres for Vocational and Adult Education, (Netherlands)

<http://www.bveraad.nl/>

Career Space

<http://www.career-space.com>

Centre for Development of Human Resources and Quality Management, (SCKK), (Denmark)

<http://www.sckk.dk>

Centre INFFO - Centre for Information on Continuing Vocational Training, (France)

<http://www.centre-inffo.fr/>

Centre for International Cooperation and Mobility in Education and Training (Cirius), (Denmark)

<http://www.ciriusonline.dk/eng/certsupp/>

Committee on Advanced Vocational Education, (Sweden)

<http://www.ky.gov.se/>

Credit transfer in VET Virtual Community

<http://Cedefop.communityzero.com/credittransfer?go=z988442>

Europa - the European Union on-line: Europass

http://europa.eu.int/comm/education/programmes/europass/index_en.html

Europa - the European Union on-line: Recognition and Transparency of Qualifications

http://europa.eu.int/comm/education/policies/rec_qual/rec_qual_en.html

European Centre for the Development of Vocational Training (Cedefop)

<http://www.Cedefop.eu.int/>

European Training Village: Recognition and transparency of vocational qualifications: the way forward

<http://www2.trainingvillage.gr/download/Cinfo/Cinfo198/C1B01EN.html>

European Training Village: The Netherlands, Netref: information exchange started up

<http://www2.trainingvillage.gr/download/Cinfo/Cinfo198/C1D04EN.html>

Eurostat

<http://europa.eu.int/comm/eurostat/>
Federal Institute for Vocational Training, (Germany)
<http://www.bibb.de/>
International Labour Organisation
<http://www.ilo.org/public/english/>
Interskills
<http://www.interskills.info>
Ministry of Education and Science, (Sweden)
<http://www.education.ministry.se>
Ministry of Social Affairs, Labour and Solidarity, (France)
<http://www.travail.gouv.fr/>
National Agency for Education, (Sweden)
<http://www.skolverket.se/>
National Board for Education, (Finland)
<http://www.oph.fi>
National Council for Educational and Vocational Guidance (RUE), (Denmark)
<http://www.r-u-e.dk>
National Qualifications Authority of Ireland
<http://www.nqai.ie/>
National reference point for Vocational Qualifications, Sweden (SENRP)
<http://www.senrp.se/>
Norwegian Council for Higher Education
<http://www.uhr.no/>
Organisation for Economic Cooperation and Development (OECD)
<http://www.oecd.org/home/>
Qualifications and Curriculum Authority, (United Kingdom)
<http://www.qca.org.uk/>
Scottish Credit and Qualifications Framework (SCQF)
<http://www.scqf.org.uk/>
South African Qualifications Authority
<http://www.saqa.org.za/>
Standing Conference of Länder Ministers of Education and Cultural Affairs, (Germany)

Cedefop (European Centre for the Development of Vocational Training)

**European reference levels for education and training: promoting credit transfer
and mutual trust**

Study commissioned to the Qualifications and Curriculum Authority, England

Mike Coles

Tim Oates

Luxembourg: Office for Official Publications of the European Communities

2005 – VI, 126 pp. – 21 x 29.7 cm

(Cedefop Panorama series; 109 – ISSN 1562-6180)

ISBN 92-896-0406-9

Cat. No: TI-67-05-379-EN-C

Free of charge – 5146 EN –

This report is the principal outcome of the Cedefop-funded study on 'reference levels – zones of mutual trust for the accumulation and transfer of credits: definition of reference levels in vocational education and training'. It focuses on two key areas:

- (a) how zones of mutual trust (ZMTs) operate, and whether they are useful for both understanding how transparency arrangements operate and for framing public policy designed to improve access and progression (in employment, education and training);
- (b) whether an agreed framework of levels would help allocate qualifications and accumulated experience effectively to improve ZMTs – particularly in increasing Europe-wide cooperation in vocational education and training.

On (a), the authors define ZMTs and conclude they are extremely useful for explaining access and progression in employment and vocational education and training.

On (b), based on extensive scrutiny of existing qualification levels frameworks, they conclude a new framework and associated administrative arrangements for its effective implementation are a prerequisite for the proper design and application of European credit transfer schemes in VET (ECVET). As a result, the project team provides a theoretical basis for a new eight-level framework, which includes both outcome and process elements. It is both practical and easy to use.

European reference levels for education and training: promoting credit transfer and mutual trust

Study commissioned to the Qualifications and Curriculum Authority, England



European Centre for the
Development of Vocational Training

Europe 123, GR-570 01 Thessaloniki (Pylea)
Postal address: PO Box 22427, GR-551 02 Thessaloniki
Tel. (30) 23 10 49 01 11, Fax (30) 23 10 49 00 20
E-mail: info@cedefop.eu.int
Homepage: www.cedefop.eu.int
Interactive website: www.trainingvillage.gr

Free of charge – On request from Cedefop

5146 EN



Publications Office
Publications.eu.int

ISBN 92-896-0406-9



9 789289 604062