UVAC

UNIVERSITY VOCATIONAL AWARDS COUNCIL

A Higher Education Context for

National Occupational Standards

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Commissioned by UVAC on behalf of Edexcel

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Contents

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Foreword

This report by Stephen Swailes of University College Northampton builds on earlier work commissioned by UVAC on the use of National Occupational Standards (NOS) and National Vocational Qualifications (NVQs) based on the standards, including a report by the same author in 2002 on the barriers to the take-up of higher level NVQs.[1] In particular, this latest work complements and academically underpins the recently-published UVAC *Fit for Purpose* guide for curriculum designers and deliverers on the use of National Occupational Standards in higher education to meet the needs of employment.[2]

Awareness within higher education of National Occupational Standards remains low, not least because the standards, developed by employers through their Sector Skills Councils, are rooted outside the HE system. With widened participation and increased graduate employability high on the HE agenda, one of UVAC's priorities is to increase understanding among HEIs of the potential of NOS as tools to deliver these objectives.

Therefore the aim of this report, sponsored by Edexcel, is to raise awareness and increase understanding of NOS by setting the standards in a higher education context. The report explains what National Occupational Standards are and charts the economic factors and government policies that drove their development. This is set alongside the contrasting development of HE quality standards and the infrastructure that supports them. The report then provides a range of examples of the use of NOS and NVQs in higher education, with the implications for assessment.

The report concludes that the use of NOS in HE is increasing and, crucially, that the standards are a gateway to substantial HE engagement in workforce development. To support institutions in realising this potential, UVAC is organising a series of *Fit for Purpose* workshops in 2004–5 on how to incorporate NOS in HE programmes. In this way the report will provide a basis for influencing practice, as well as enhancing our understanding of the subject.

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[1] UVAC (2002) *Structural barriers to the take-up of Higher Level NVQs*, Bolton: University Vocational Awards Council. See also Swailes, S. and Roodhouse, S. (2003) Structural barriers to the take-up of Higher Level NVQs, *Journal of Vocational Education and Training*, **55**, 1, 85-110.

[2] UVAC (2004) *Fit for Purpose: The use of National Occupational Standards in higher education to meet the needs of employment.* Compiled by Roodhouse, S. and Hemsworth, D., Bolton: University Vocational Awards Council.

Summary

This report extends previous research into the adoption of National Vocational Qualifications in the university sector by investigating how National Occupational Standards are linked to higher education qualifications. National Occupational Standards have been increasingly used as free-standing tools to assist in job descriptions, evaluation and learning outcomes for programmes of study and this flexibility in the system provided the rationale for the report.

Information was collected through interviews with staff in higher education and through a literature review. The paper begins by reviewing the context for academic standards and the management of standards in general. The scope for qualifications based on National Occupational Standards is evaluated and examples are given. The use of National Occupational Standards in higher education is increasing and is set to increase further. National Occupational Standards have the potential to become a common denominator linking stakeholders in higher education engaging in sector workforce development strategies. Implications are developed in the following areas: programme design, including the content and methods of assessment; programme validation events; the production of a database of Standards used in higher education programmes; parity of policies and practices regarding accreditation of prior experience and learning; and narrowing gaps between sources of knowledge production and knowledge use.

Recommendations

The report has the following implications for national agencies:

- **The Quality Assurance Agency for Higher Education (QAA) should consider how Benchmark Statements could be more strongly related to NOS and how to promote NOS as good practice**
- **The Higher Education Funding Council for England (HEFCE) should include NOS in the work-related strategy it is developing**
- **The Higher Education Academy should consider how good practice in incorporating NOS into HE programmes can be exchanged and disseminated**
- **In ensuring that NOS are developed and updated, the Qualifications and Curriculum Authority (QCA) should consider the use of NOS by HE, in particular their usability as learning outcomes.**

The report makes the following recommendations to support and accelerate the increasing use of NOS in HE programmes:

- **Better structures are needed to connect higher education providers, Sector Skills Councils and professional bodies to disseminate information on employers' needs and the ways that NOS could be used to maximise the relevance of qualifications.** One approach would be to strengthen validation events for new programmes in areas where NOS exist to put greater emphasis on employer involvement and explicit reference to NOS. Sector Skills Councils have an important role to play in disseminating information on qualification development in light of emerging NOS and government initiatives on skills development.

- **NOS should be promoted in higher education to show how they can be used in qualification design without implications for additional resources.** A database of qualifications and the standards they are linked to should be established as an important tool for this. Further study should explore the methodologies by which NOS can be selected for inclusion in qualifications – the UVAC *Fit for Purpose* guide is a starting point in this regard. A pilot project to map a sample of Benchmark Statements against NOS is recommended to create greater understanding of the relationships between Statements and NOS.

- **An enquiry into the use of work-based modules in NOS-based programmes should be undertaken to establish a baseline of consistent policy and practice across institutions relating to accreditation of prior experience and learning (APEL).**

- **Qualifications incorporating NOS need to be seen as being part of clear and integrated work-based learning career pathways involving new learning if they are to attract trainees and students.** Pathways through Apprenticeships, Foundation Degrees and Honours degrees are an example of this.

- **Academic departments should prioritise staff development in the principles and practices of work-based learning and the pedagogical issues surrounding programme design and assessment issues that accompany it.** Such development should include updating professional practice through, for example, secondments and networking.

1. Introduction

Economic and political background

Three major changes to education and training provide a context for this report. The first embodies the rise of the vocational qualifications movement in the 1980s that arose from concerns about the skill levels of the UK workforce in relation to national competitiveness. This movement led to the introduction of Scottish and National Vocational Qualifications (SVQs/NVQs) under the auspices of the National Council for Vocational Qualifications which has evolved into the Qualifications and Curriculum Authority. The second change embodies the reforms to higher education brought about by the *Further and Higher Education Act 1992* that allowed polytechnics to adopt the title of university and, by removing the awarding body for polytechnics (the Council for National Academic Awards), gave a group of 'new' universities their own degree awarding powers.

The third change stems from the *National Committee of Inquiry into Higher Education* (The Dearing review and report) of 1997 and the White Paper, *The Future of Higher Education*, (DfES, 2003). Among a wide-ranging set of recommendations, the Dearing report recommended that governments should respond to increasing demand particularly at sub-degree level and that Higher Education Institutions (HEIs) should identify opportunities to increase the extent that programmes help students to become familiar with work. The White Paper, amongst other things, sets out a vision for two-year work-focused courses to fill skills gaps, collaboration between Sector Skills Councils and universities to ensure they have up-to-date knowledge in each vocational area, and a need for traditional academic disciplines to integrate the skills and attributes needed by employers into programmes. Higher education is expected to develop more 'work-related and employer-focused' education to meet skills gaps (Little et al, 2003).

Alongside the changes to higher education introduced in 1992, the government set up new arrangements for assessing the quality of education (see Williams, 1997). Funding councils were created and part of their remit was, and is, to assess the quality of the educational provision that they fund – a responsibility now resting with the Quality Assurance Agency (QAA) for Higher Education. The QAA has the responsibility of safeguarding 'public interest in sound standards of higher education qualifications and to encourage continuous improvement in the management of the quality of higher education' (QAA, 2003).

Another contextual factor stems from the changing relationship between the State, the public sector and the professions in the UK. Until about 1980 the public sector professions benefited from rising public expenditure and a high degree of control over how that money was spent (see Perkin, 1989, pp.419–436). Since then there have been concerted attempts to reduce state involvement in the provision of public services coupled with strong concern about the ability of professions to regulate themselves. One of the ways in which professions have responded to this concern is by putting greater emphasis on the introduction of

mandatory qualifications and pathways to registration with a professional body. A net result of this has been an increasing professionalisation of the workforce. This has impacted upon relationships between professional bodies and higher education, in particular the recognition of higher qualifications, and by influencing the curriculum.

Academic standards and quality

In a context of expansion and steadily declining funding per student there has been regular media coverage of accusations of declining university standards, 'dumbing-down' and allegations concerning the dubious nature of some courses. These accusations are difficult to rebut objectively, given the ways with which academic standards are defined on an institution by institution basis and are monitored within institutions. If each HEI can set its own standards then how do learners, employers and the public know that standards are consistent and set at appropriate levels?

Standards remain, therefore, a key part of the broad initiatives to raise quality throughout public services and to reassure public confidence in those services. In a higher education context the public needs assurances that the standards of awards are appropriate and that differences in standards between institutions are made clear. Standards represent ways of protecting the value of qualifications and HEIs are now assumed to be responsible for the standards of their awards. As such they need ways of setting and monitoring standards and of intervening to improve standards where needed. Educational standards are not easily defined, however.

The expansion of higher education has led to much greater diversity among students, notably in terms of prior experience, prior academic achievement, new courses in new subjects and new methods of learning and assessment. Hence, the idea that broadly uniform standards in the university sector can apply across a sector that has expanded in terms of institutions and the student base is contentious. Furthermore, Becher (1997) argues that academic standards need to be seen as 'specific to a defined context. Within a particular context assessment can be reasonably objective: outside it, they are not directly measurable against other, similarly context-bound assessments'. Academic standards also apply to three distinct aspects of a teaching programme (Williams, 1997).

- Input standards such as the prior achievement of students and teaching staff.
- Process standards such as the level of challenge posed by curriculum and teaching methods and the quality of resources used by students.
- Output standards relating to students' attainment in terms of knowledge and skills.

In relation to output standards, Becher (1997) used differences in the proportion of first class degrees awarded by subject to argue that this reflects the complexities of applying consistent standards across subjects. Updating Becher's work with data for 2000/01, 25 per cent of undergraduate degrees in mathematics were awarded with first class honours, compared to 15 per cent of engineering degrees and 7 per cent of social, economics and politics degrees (HESA, 2003). These variations support the view that the processes of determining output standards produce results that are highly contextualised. The situation is further complicated since entry-level qualifications, eg. A Level points, vary widely between HEIs.

National Occupational Standards (NOS), which are entirely concerned with standards of output, attempt to dispel much of the subjectivity of assessment through the use of, usually, extensive lists of performance criteria that are relatively context free. They exist to establish *national* standards rather than *individual* standards. Before looking in detail at NOS in higher education, however, it is worth taking a wider view of the ways that academic standards in general are supported and enhanced.

2. The Standards Infrastructure for Higher Education

Teaching quality assessment

Higher education institutions are organised around disciplines and programmes of learning within those disciplines. Since the 1992 Act, funding councils have been responsible for assuring the quality of the teaching that they fund. The initial methodology, known as Quality Assessment, was replaced in 1997 by a revised methodology, Subject Review. Subject Reviews were carried out under the auspices of the Quality Assurance Agency in relation to the aims and objectives set by each institution for its teaching departments and measured the extent to which providers meet those aims and objectives. In this respect it was assessing fitness for purpose and providing information to prospective learners about the quality of programmes. Assessment was carried out against six aspects of provision: curriculum design, content and organisation; teaching, learning and assessment; student progression and achievement; student support and guidance; learning resources; and, quality management and enhancement. Review reports became public documents and contained areas for commendation as well as recommendations for action by the department.

Two problems can be identified with Subject Review. First, since reviews are carried out within the context of an institution's aims and objectives, a comparison of review outcomes within a subject across HEIs has reduced validity as departments receiving similar scores may be providing very different student experiences and outcomes. It was possible for standards of teaching/learning in one department to be higher than in another with a lower overall score. Second, the proportion of academic subjects given the highest rating by QAA Subject Review assessors shows large variations by subject. Of the 111 departments reviewed in Hospitality, Leisure, Recreation, Sport and Tourism, 5 (4.5 per cent) received the maximum score of 24. For Philosophy, 23 out of 41 departments (56 per cent) that were reviewed scored 24 and for Politics 16 out of 65 (25 per cent) received the maximum score. These variations may accurately reflect differences in quality across subjects but they can also be used to question the consistency with which quality assessments are conducted (Becher, 1997).

The Subject Review methodology received a steady stream of criticism from academics and dealt with standards tangentially (Laughton, 2003, p.319). Objections to Subject Review included: departments 'playing the game' resulting in rising review grades without necessarily evidence for rising quality and standards; the review methodology being open to mistakes by reviewers leading to less favourable reports in some cases; and objections to the basic methodology and its assumptions (Laughton, 2003). A new focus for quality assessment, Institutional Audit, has been introduced by the QAA that requires institutions to continually reflect on their provision and publish self-evaluation documents including information on the standards of their awards. Discipline Audit Trails are part of Institutional Audit and look at the standards of awards at subject level (Brennan, 2002; QAA 2002).

Benchmark statements, programme specifications and level descriptors

Subject Benchmark statements were introduced by the QAA following a recommendation in the Dearing Report of 1997 (the *National Committee of Inquiry into Higher Education*). The first statements appeared in 2000 and most cover undergraduate level provision. They are written at subject level and describe the 'nature and characteristics of programmes', general expectations about standards and 'the attributes and capabilities' of graduates. Benchmarks do not provide a detailed curriculum but do specify subject-specific skills and transferable skills. Standards for graduates may be expressed in terms of *threshold*, *modal* and *top* levels of attainment.

Threshold describes the level that should be exceeded by all graduates and represents knowledge and understanding in key areas, competence in subject-specific skills together with a capacity to apply one's own critical judgement. Modal represents the standard of achievement by a majority of graduates and represents a wide knowledge and understanding, a command of subject-specific and intellectual skills and use of a variety of sources to keep informed. Modal differs from threshold through a capacity to apply own perspectives to situations and to deal with complexity and uncertainty. Top represents excellence and is indicative of comprehensive knowledge and understanding, excellent subject-specific and intellectual skills, self-awareness and team skills, and a broad view derived from a range of sources. Top differs from modal through creativity and adaptability and superior critical and reflective skills.

Fifty-eight Honours level statements and two Master's level statements are now available, extending from minority areas of higher education such as Anthropology with about 2,500 students to high volume areas such as nursing with about 150,000 undergraduate students and business and management with about 165,000 students. Mapping the existing benchmark statements onto the numbers of students by subject suggests that at least 70 per cent of undergraduate students in higher education are following subjects covered by benchmark statements. The new system of quality assurance and quality enhancement, Institutional Audit, will check that departments have taken serious account of statements in the design and delivery of their programmes.

Higher education institutions are also now required to publish programme specifications for all of their awards. Specifications set out the aims and objectives of a programme, the skills that should be developed, the assessment strategy and indicators of quality. QAA review teams will use adherence to Specifications as part of the institutional audit processes in the new arrangements for quality assessment.

The QAA has also produced level descriptors for each of the three undergraduate levels and Master's level. The descriptors relate to commonly used grading systems so, for

example, the descriptor for a level 2 strong pass (typically graded 47–49 per cent) reads, 'work of satisfactory quality demonstrating a reliable knowledge base and evidence of developed Key Skills and/or subject-based skills but still containing limited evidence of analysis, synthesis, evaluation or application of appropriate detail or skill application'. While it is clear that institutions have their own standards of assessment, the use of level descriptors across the sector helps raise the consistency of interpretation across institutions. By describing the characteristics of the full marking range, level descriptors help to interpret how threshold, modal and top levels of attainment can be judged.

External examining

This long-standing traditional sector system operates on a day-to-day level in all HEIs and involves a network of external examiners in an effort to uphold academic standards (Brown, 1997, Watson, 1997). The system in which samples of students' work are moderated by externals is easy to operate but vulnerable to flaws such as appointing examiners drawn from personal contacts who do not engage critically with the department they are examining for in regular dialogue and in their annual reports. Furthermore, criteria for assessment may be open to considerable interpretation. However, under new arrangements HEIs will be required to publish information on key performance areas that is taken from their external examiners' reports.

Qualifications frameworks

The National Qualifications Framework (see QCA) was introduced as part of the government's drive to raise public confidence in the standards of qualifications. It extends from 'entry level' to level 1 (GCSE grades D to G or equivalent) through to level 5. The QAA has introduced a framework for higher education qualifications covering Certificate, Intermediate, Honours, Masters and Doctoral levels with guidance on the qualification descriptors and the volume of learning required.

Qualifying route courses

Some higher education courses are linked to the qualifying routes of professional bodies. Professional bodies are keen to maintain the supply of qualified entrants and such courses are in effect conforming to certain standards set by an external body. Three examples are given below.

Teacher training

Students wishing to work as teachers follow courses that meet DfES standards. The Teacher Training Agency (TTA) sets a generic curriculum. Courses are inspected regularly and graded from 1 to 4. The score determines how many places are funded by the TTA.

Courses can be declared non-compliant and places taken away from the institution. Students gaining Qualified Teacher Status (QTS) then undertake a year in teaching practice where their performance is monitored. Students who wish to study education but who do not want to work as teachers pursue courses without QTS. There is growing demand for non-QTS courses, eg. from nursery assistants. The Quality Assurance Agency (QAA) benchmark statement covers education as an academic discipline (education studies) and not as a vocation. About 33,000 undergraduate students and about 23,000 postgraduates were studying for teacher training in 2001/02.

Psychology

Most single Honours degrees in psychology are linked to the British Psychological Society's Graduate Basis for Registration (GBR). The GBR criteria include a minimum of 50 per cent psychology with the final year project also being in psychology. In addition to this the psychology component of the degree must cover and examine all areas of a specified syllabus. GBR-accredited courses also have to meet a number of resource requirements covering a minimum number of dedicated laboratories, dedicated technical and administrative support staff, qualified full-time teaching staff, library resources and information technology facilities. The QAA benchmark statement covering psychology does not differ markedly from the BPS syllabus requirements and thus most courses with GBR largely comply with the benchmark. Once admitted to GBR, a person can apply for a BPS-approved postgraduate course, eg. in occupational psychology. About 35,000 undergraduates were studying psychology (as a science and a social science) together with about 10,000 postgraduates in 2001/02.

Law

The Law Society and Bar Council have a statutory duty to oversee qualifying courses, eg. Bachelor of Laws, and produce a Joint Statement laying out the seven foundation subjects that must be in a Qualifying Law Degree (QLD). Qualifying for the legal profession requires three stages. Stage 1 (the academic stage) requires a QLD or a conversion course for non-law graduates, Stage 2 (a vocational stage) involves a legal practice course for solicitors or a Bar Council course for barristers. Stage 3 (a practical stage) involves a two-year training contract for solicitors or a one-year pupilage with a barrister. About 44,000 undergraduate students and about 20,000 postgraduates were pursuing law qualifications in 2001/02 although not all law courses will be QLD.

The requirements to maintain programme approval by a professional body vary across the professions but typically involve initial inspection visits and periodic revalidation. It is in essence a peer review system using centre approval criteria.

3. Uses of National Occupational Standards

What are National Occupational Standards?

National Occupational Standards (NOS) have arisen out of concern for standards in workforce skills, the relevance of the curriculum to the workforce and as part of an initiative in the UK to raise the skills base of the workforce in the face of global competition. They are developed through reviews of industrial sectors and the functions of work roles including tasks undertaken, skills and knowledge required and the range of situations in which work is undertaken. Their creation is co-ordinated by Sector Skills Councils (including the former National Training Organisations) who 'own' the standards and is heavily influenced by employees and employers. National Occupational Standards provide a framework for mapping vocational qualifications and form the structure of National Vocational Qualifications and Scottish Vocational Qualifications (NVQ/SVQ). Every sector has NOS although not all have been embedded in NVQs/SVQs.

National Occupational Standards describe standards of good practice in an occupational area and provide the criteria to assess whether an individual is performing competently and specify the knowledge, understanding and skills needed for competent performance (LGNTO, 2002). They are now widely used across most sectors of the UK economy and are particularly embedded in public services. They have uses beyond being an assessment method in vocational qualifications including (Holyfield and Moloney, 1996; LGNTO, 2002):

- informing the design of job descriptions and person specifications
- informing recruitment, selection and performance appraisal decisions
- boosting employee performance
- assisting staff development and training plans
- reviews of service delivery.

National Occupational Standards comprise units of competence and there is some scope to use units from one NOS in the construction of another. Standards-setting bodies need to 'consider a wide range of end users when establishing the form and structure of their National Occupational Standards' (QCA, 2000).

A rationale for NOS-based programmes in higher education

Peregrine (2002) put forward several incentives for HEIs to design and deliver qualifications based on NOS and these are elaborated below.

- To assist progress towards the widening participation agenda. Widening participation targets will not be met by expansion of 'straight' arts, humanities and science subjects but through attention to vocational areas and using new forms of delivery such as Foundation Degrees.

- To provide opportunities for progression in vocational subjects to people who have obtained lower-level vocational qualifications and hence stimulate demand for new types of provision.
- To match qualifications to students undertaking work-based learning and to provide additional opportunities for lifelong learning.
- To access funding, eg. for the development of Foundation Degrees that must be linked to NOS.
- To incorporate NOS in consulting and knowledge transfer activities, eg. non-certificated training and development. HEIs will play an increasing role in regional regeneration and NOS have a part to play in ensuring the required skills base, including graduate skills, to support regeneration and the achievement of national training targets.
- To strengthen ties between HEIs, Sector Skills Councils and professional bodies.
- To certificate Key Skills.
- To use NOS in the training and development of university staff.

Achievement of NOS also represents a licence to practise in some occupational areas.

National Occupational Standards and higher education programmes

The introduction of higher NVQs stimulated a dialogue between higher education providers, NVQ awarding bodies and employer groups that explored the implications for HE of a structured framework of vocational qualifications. By way of context, two reports published by the National Council for Vocational Qualifications (NCVQ) identified several important points that are worth summarising (NCVQ, 1997a, 1997b). NVQs embrace sector-defined knowledge and skills rather than knowledge and skills largely defined by institutions as being appropriate for assessment. There could be substantial gaps between the knowledge and skills specified in NVQs and knowledge/skills covered by HE providers. The prioritisation of work-based evidence and assessment differed from HE practice in some areas although some commonly used assessment methods generated evidence for competence. Basically, traditional HE assessment did not meet the criteria for NVQs in terms of showing links between evidence and standards and control over the nature and scope of evidence. Some HE courses, however, had considerable overlap with the content of relevant NVQs and the potential to strengthen HE courses through NVQs was deemed to be high.

Level of usage and scope for NOS-based provision

The provision of courses related to NVQs and NOS in higher education is not known accurately. A survey of 145 HEIs in 2000 found that 96 did not offer NVQs, with 33 offering them and 16 unknown (Morgan, 2002; UVAC 2000). Of the 33 offering NVQs, 22 were post-1992 universities. On this basis it seems that NVQ-related programmes make up a small proportion of all provision. However, in some areas such as health care, social work and management training NVQs and other NOS-based courses are an important part of the total offering.

Student numbers enrolled on NVQ courses in 2001/02 totalled 705 at level 4 and 30 at level 5 (source HESA), although 3,500 full NVQ awards were made in the same year by HEIs (source QCA). In 2000, 2.5 per cent of all NVQ level 4 and 5 awards was made by higher education institutions (Swailes and Roodhouse, 2003) representing less than 400 students. However, data for NVQ completions relate to whole NVQs only and so exclude unit certification which can be a deliberate component of a programme and is likely to have grown recently through Graduate Apprenticeships and Foundation Degrees (FDs). The number of students enrolled on FDs in 2001/02 was 3,775 (source HESA) and 12,000 in 2002/03. Furthermore, an HEI may be collaborating on a programme involving an NVQ but not actually assessing the NVQ. The actual level of NVQ provision through higher education institutions seems likely to be higher than official figures suggest and to be growing.

The scope for NOS can be appreciated from a mapping of level 4 NVQs onto higher education subjects of study (see Appendix 1). Using data for 2001/02, a preliminary mapping suggests that 38 per cent of the 1.67 million full-time and part-time students were pursuing first degree and other undergraduate programmes in named subjects for which one or more level 4 NVQs, and therefore NOS, existed. (This estimate assumes that students enrolled on unspecified combined subjects are distributed in the same proportion as for named subjects. Nursing students who accounted for 9.5 per cent of the total are not included in the estimate.) Adding the 60,000 or so students following largely vocationally-oriented higher education courses in further education centres (Clark, 2002) raises the estimate of students following programmes in areas where level 4 NVQs exist to 41 per cent.

The main areas where NOS appear to have a clear role in supporting university qualifications are accounting, agriculture and related subjects, building, computer science, some branches of engineering, social work, business and administration, journalism, publishing and creative arts and design (see Appendix 1 for employment sectors covered by NOS). The estimate of 41 per cent is likely to be an overestimate since for some subjects the actual potential correspondence between NOS and programme design/content will be low. Large areas of higher education provision do not correspond to NOS, including medicine

and subjects allied to medicine, biological sciences, much of the physical sciences, law, mathematical sciences, social studies, economics, politics, languages and humanities. It is worth noting, however, that the growth of student interest in applied sciences (see the coverage of forensic science below) provides increasing opportunities for NOS to be used.

Programme designs

HEIs that are developing courses in vocational areas served by NOS, but which are not linked to qualifying routes, are free to build, to a greater or lesser extent, modules and student progression around the units, elements and knowledge requirements of one or more sets of standards. Intended learning outcomes can be expressed using the vocabulary of NOS and assessment requirements can be built around the main performance criteria. In this simple model, there is no explicit linkage to an NVQ and hence no need to invoke the quality assurance infrastructure that accompanies them; namely adviser/assessor arrangements, verification systems and a separate Awarding Body.

An undergraduate degree in management, for instance, could be based partly around the core units contained in the NVQ4 Management covering finance, managing activities, managing people and managing information, and units from other NVQs such as in customer service and training and development. Students could be assessed using evidence that relates closely to the NVQ units but which is not taken from work situations, although it could be where students have a substantive job. Evidence could involve simulations, role playing and project work designed to reflect the personal competences, performance competences and knowledge/understanding in the core units. Evidence could be similar to that used for NVQs but need not be mapped onto as many detailed performance criteria in preference to assessment against a smaller number of broader criteria. Key to the success of this model is acceptance by employers that useful competences are being developed and assessed. Institutions would need to show extensive employer input to the design, validation and management of courses adapting NOS in this way and maintain that input in the operation of courses.

Alternatively, programme designs involving substantial networking are used and three forces in particular drive some higher education institutions into a network model of delivery:

- Political sensitivity towards NVQs of any level
- Positive attitudes towards NVQs but a desire to distance higher education provision from further education level provision (NVQ1–3)
- The need to network complementary strengths.

One model is of a university networking with a FE provider to deliver/assess the NVQ aspects of a joint programme. Alternatively, universities may collaborate where one provides conventional academic inputs to a programme and another manages a vocational component to provide a complete training programme for an employer. This model is followed in a joint programme to deliver management training for the National Health Service in which the University of Birmingham provides a Master's in Health Management and DeMontfort University provides an NVQ4 in Management with a Certificate in Reflective Management. Both the NVQ and the Certificate derive from the portfolio with the Certificate deriving from reflections on practice and theory undertaken for each NVQ unit. Similarly, the Probation Service has contracted with a group of HEIs to provide the same component of a programme but on a regional basis. The Diploma in Probation Studies, for example, is built upon an NVQ4 and a BA in Community Justice.

Examples of qualifications based upon NOS and NVQs

Diploma/BA in Social Work

The Diploma in Social Work (DipSW) was devised in the early 1990s but the original qualification was criticised for not preparing social workers adequately for professional practice. As a result, and in contrast to a straight NVQ route, standards were constructed to inform the creation of a revised qualification (CCETSW, 1995). The model used had the following features:

- responsibility for the standards was separated from responsibility for the professional qualification
- the qualification was firmly embedded in HE and accredited at Diploma level
- an HEI and an employer had to be in partnership to provide practice opportunities
- holistic assessment was needed in preference to the disaggregated approach typical of NVQs.

In contrast to the integrated nature of the DipSW, the Diploma in Probation Studies, which replaced the DipSW as the qualification required by probation officers, separated the knowledge and competence components into separate qualifications – a BA and an NVQ level 4 (Weinstein, 1998).

Recent developments have overtaken the DipSW and stipulate that a three-year BA Social Work that includes practice elements assessed against new NOS is mandatory for people intending to become registered social workers. Higher education providers need to be accredited to run the BA Social Work by the General Social Care Council although the design of the BA may vary. There is no requirement for formal HEI/employer partnerships but sufficient collaborative arrangements have to be in place to deliver the practice elements

that amount to 50 per cent of the degree in terms of time. All practice elements are designed around the NOS although students are not assessed for an NVQ. The practice component of the BA is assessed by observation, weekly supervision by a practice teacher and assessment of documentation produced naturally in the job among other ways. Non-practice modules are linked to the subject Benchmark statement and to the knowledge and values requirements of the NOS.

BSc Nursing

Nursing qualifications, for example a BSc Nursing or BSc Occupational Therapy, require conjoint validation by a university and a professional body such as the Nursing and Midwifery Council and the Health Professions Council. Validation panels test the extent to which courses map against the expectations of professional bodies and QAA benchmark statements such as those for Nursing, Occupational Therapy, Podiatry and Midwifery. The benchmark statements integrate with the standards produced by the professional bodies. It would be possible to include certain NVQ units in Nursing degrees but this is not common. The University College Northampton BSc Nursing, for instance, has clear competences to be achieved at the end of year 1 which could have been mapped against the NVQ3 in Care for the purpose of awarding the NVQ. A reason for not including the NVQ is that the course ethos is one of progression towards a BSc rather than of exiting after stage 1. However, any student who leaves the course after year 1 would be able to submit for NVQ assessment since the course assessment is portfolio based. Northampton assesses a range of health-related NVQs at level 3, eg. Dental Nursing, Laboratory Technicians, and these can be used for Accreditation of Prior Experience and Learning on academic programmes in conformance to the NHS 'Skills Escalator'.

Health Informatics

The National Health Service requires high-quality information management and information technology (IMT) provision in order to meet its service objectives. In 1992 the NHS launched an IMT strategy, part of which covered the supply of suitably qualified professionals. New standards-based professional awards were developed jointly by a network of collaborating organisations (Bond and Wilson, 2000). This involved:

- the NHS Executive which owned the standards
- the Information Management Group of the Executive which oversaw the development of the standards used in the new awards
- the Institute of Health Care Development (IHCD) which managed awards and approves assessment centres
- the Open University Validation Service which credit rated the standards
- ASSIST which worked with IHCD to recognise and promote the awards
- accredited assessment centres.

The network of stakeholders is an important component in the development of higher-level NVQs and other competence-based qualifications needed to give legitimacy to the project and to ensure key interests are represented. The awards produced spanned Certificate in IMT, Diploma, Advanced Diploma and Masters in Health Information. Key features of the awards include:

- portfolios based on learning outcomes
- an assessment framework used to acquire knowledge and skills
- interdisciplinary units covering information systems, technology and management
- delivery by HE with strong work-based learning and a national network of assessment centres.

This structure of programmes has, however, moved on and the NHS Information Authority is working on a UK-wide development of NOS for health informatics staff with the intention that, among other things, the NOS should underpin a qualifications structure for staff working in the sector. One of the problems this will overcome is variation in the standards of courses with similar titles, eg. MSc in Health Informatics. The latest work on NOS will link to existing courses and inform the development of new courses that will map academic programmes onto health informatics learning outcomes (NHSIA, 2003).

Graduate Apprenticeships

Graduate Apprenticeships (GA) combine undergraduate honours or postgraduate qualifications with work-based learning that is underpinned by Key Skills, NOS or units of NVQs. Graduate Apprenticeships complement Foundation Degrees that operate at below the Honours degree level and for a comprehensive review of how GA operate together with case studies see UVAC (2003a). Thomas and Grimes (2003) report on a small-scale part-time Graduate Apprenticeship linked to a Hospitality Business Management degree. The programme includes QCA Key Skills units and four units of a level 4 NVQ and takes two years after completion of a Higher National Diploma. The GA project identified that:

- students needed extensive help understanding the requirements of the NVQ units
- modules on the degree were used to provide knowledge and understanding for the NVQ units and this helped to show the theory/practice relationship
- students adopted reflexive learning processes, ie, by integrating theory and practice
- because students came with differing levels of prior achievement on Key Skills the use of pre-set Key Skills units in a programme is likely not to present a challenge to some students.

Two important issues emerged from this project. First, that there were major implications for the setting-up of work placements and workplace assessments and so academic staff need to develop and keep close relationships with employers. Second, that the need to combine two different assessment regimes (NVQ and academic) was problematic and will be particularly so on large-scale schemes. There were issues about who 'owns' the vocational aspects of the scheme and resource implications of the employer liaison and assessment requirements must be fully recognised.

Advanced Apprenticeships

One example supported by the Sector Skills Council, e-skills UK, includes an Advanced Apprenticeship for Information Technology Practitioners (software development) delivered through a further education college that leads into a Foundation Degree in Business Computing delivered in a partner higher education institution. Apprenticeship students work towards a Technical Certificate for Information Technology Practitioners (Software Development) at level 3. Successful completion of the Certificate allows progress to NVQ level 3 units or, exceptionally, academic modules at the HEI. Completion of the NVQ units leads to the award of an Advanced Apprenticeship in Information and Communication Technology. Academic modules then lead to a Foundation Degree in Business Computing and completion of additional NVQ units (from an optional NVQ 4 in IT Services Customer Systems Support) leads to a Higher (Graduate) Apprenticeship in Information and Communication Technology. Successful students may then proceed to an Honours degree in Business Computing.

Technical Certificates

Technical Certificates are vocationally-related qualifications that deliver the knowledge and understanding requirements of an NVQ included in the Apprenticeship framework. They have been created using new qualifications or adaptation of existing ones in vocational areas. They are delivered off-the-job using a structured approach relating to the knowledge and understanding in one or more NVQs. They include some external assessment, for example, in the form of written tests, projects or assignments (QCA, 2003).

Pure NVQ programmes

In this model, education providers respond to a market need and act independently in delivering programmes. An example is the response by further education colleges to the need for managers of care homes to achieve level 4 Care Management (or a similar qualification) and to gain the Registered Managers Award. The learning component of the NVQ can be delivered in a College or on an outreach basis where managers from different care homes gather with a tutor. Further education colleges delivering NVQ4/5 in Management on the training programmes put together by local councils are another example.

Examples of other developments with NOS in higher education

The Sector Skills Council for Science, Engineering and Manufacturing Technologies (SEMTA), among others, is working with employers with the overall objective of raising the employability of graduates. Whereas HE has a good record of developing graduates with a strong grasp of a relevant body of knowledge there is concern in the sector that graduates are not fully equipped for industry. There is also evidence that interest in 'straight' science degrees is declining and is being replaced by more vocationally-oriented degrees, eg. physics and chemistry being replaced by interest in forensic science degrees. This is akin to the interest shown in criminology courses at the expense of 'straight' sociology. SEMTA maintains that NOS have a critical role to play in raising graduate employability by making clear to HE the factors that employers use to judge a competent practitioner and setting minimum standards of performance competence. As the Sector Skills Council SEMTA is developing NOS for biosciences and biotechnology. The standards, when developed, will be linked to degree courses in these areas.

BSc Forensic Science

In the UK, forensic science is a new area of higher education provision. Because it is relatively new there is no QAA benchmark. Forensic science courses have in the past been fairly loose in their content leading to concerns about the overall standards achieved. The University of Central Lancashire is the largest provider of forensic science courses in higher education and has used NOS in the subject (see the Council for Registration of Forensic Practitioners) to meet the needs of the profession. In 2003/04 UCL had 580 students on the forensic science BSc and about 80 on a Foundation Degree. Intended learning outcomes on the BSc and the Foundation Degree marry broadly with the NOS elements, for instance, 'Presenting oral evidence to court and at case conferences'. A third of the modules deal with scenes of crime and two-thirds deal with chemistry, biology and psychology applied to forensics. Half of the forensic science staff are non-academic former forensic science practitioners. UCL also provides a BSc in Police and Criminal Investigation for which standards for policing have been incorporated. Anglia Polytechnic University is also a major provider of BSc and Combined Forensic Science degrees in which modules are mapped onto the 10 elements of the NOS. All lecturers on the APU forensic science courses are practising forensic scientists.

Other provision

For detailed accounts of other provision see *Fit for Purpose: The use of National Occupational Standards in higher education to meet the needs of employment* produced by UVAC (UVAC 2004) that describes Foundation Degrees in Property and Construction, Health-Related Exercise and Fitness, and Creative Sound Design, a BSc in Veterinary Nursing and Practice Administration, the Diploma in Probation Studies and an Engineering Graduate Apprenticeship and Foundation Degree.

Implications for assessment practice

National Occupational Standards offer what is essentially an assessment framework (performance competence, personal competence and knowledge requirements) and they make few, if any, demands on the route to which assessment can take place. This aspect raises several implications for what should be assessed and how it should be assessed. Key issues are given below.

What is assessed?

- Assessment focuses on the knowledge needed to underpin successful practice rather than that defined by external subject 'experts' and this calls for sources of knowledge production and knowledge use to be closely connected. This, in turn, calls for greater emphasis on what has become known as Mode 2 forms of knowledge production (see MacLean et al, 2002) and puts emphasis on knowledge production out of action research and co-operative enquiry and less emphasis on positivist origins of subject-defined knowledge.

- Strong ties between theory and practice such that the long-term development of the individual is assisted by questioning of experience and reworking of methods and practices.

- Evidence for the inclusion of personal values in writing about professional practice.

Methods of assessment include the following:

- Some form of self-assessment occurs against the standards at the start of a programme followed by action planning. Planning might cover how past achievements can be used as evidence, planning to meet gaps in the student's experience and target dates. Formal systems for Accreditation of Prior Learning may be used to take into account a student's previous learning, experience and qualifications.

- Negotiating learning outcomes with students and recording the outcomes in an individual learning contract. Devising assessment criteria for the learning outcomes although these will be specified in a NOS.

- Using learning contracts in which students undertake to complete particular activities that have been identified as capable of providing evidence suitable for assessment against learning outcomes and the NOS.

- A portfolio in which evidence is mapped against competence and knowledge requirements. Diaries recording events and feelings over a period of time can also be used.

- Problem-based learning where students use organisational projects to generate evidence for competence and knowledge.

- Assessment interviews in which students present their evidence of competence to a group of assessors.

- A strong emphasis on reflection on the student's professional practice (or simulated practice) covering both the core values pertinent to practise a particular vocation and performance. Reflection will often also cover the student's learning process.

These characteristics of the assessment process suggest that outside those areas where NOS-based qualifications are already established further use of NOS in higher education is dependent upon the availability of high-quality work placements, a supply of occupationally competent teachers, supervisors and assessors and greater use of practice-based research. In some subject areas the level of crossover between teaching positions and practice is high and perhaps best illustrated by medicine and subjects allied to medicine. In the arts, sciences and social sciences with vocational applications the interchange between teaching and practice is weaker and this could impede the use of NOS-based qualifications. There are implications for the use of high-quality simulation exercises with students where courses are based on NOS but which do not lead to an NVQ.

4. Conclusions and Issues Arising

Policy on higher education funding has forced all institutions to review their strategy. As a result some do not see NVQs and NVQ-related provision as a strategic priority and so the provision of NVQ-related qualifications in the university sector may remain polarised for some time. However, the provision of qualifications based on standards will occur more uniformly throughout the sector as undergraduate qualifications are increasingly standards-based, as Foundation Degrees and Apprenticeships become more widespread and as universities contribute to regional and workforce development.

A substantial proportion of students in higher education is following programmes that are based upon or linked to NOS or other form of national standard such as professional body endorsement and acceptance. Some subject areas have the potential to make extensive use of specific NOS in the design and delivery of qualifications, eg. business and management, although there are large areas of provision, such as the social sciences and humanities, for which specific standards are not available. However, various management standards and Key Skills could be linked to most higher qualifications and so there is an argument that virtually all university level qualifications could incorporate some aspect of NOS, although not necessarily to a large extent.

New types of qualifications and refreshed curriculum in existing qualifications mean that the use of NOS in higher education qualifications is increasing and will continue to increase. This is assisted by the view that academic standards are best judged through the outcomes of learning rather than the learning/teaching inputs that enable the outcomes to be achieved. National Occupational Standards provide the outcome-based measures by which standards can be assured and critics can be rebutted objectively.

The national infrastructures for education and skills provision are still somewhat fluid and NOS are a relatively powerful and cost-effective means of becoming the 'common language' that helps to connect the main stakeholders. Better structures are needed to connect higher education providers, Sector Skills Councils and professional bodies to disseminate information on employers' needs and the ways that NOS could be used in order to maximise the relevance of qualifications. These structures need to help employers understand how vocational provision relates to sector needs. One approach would be to strengthen validation events for new programmes in areas where NOS exist to put greater emphasis on employer involvement and explicit reference to NOS. If there are reasons to omit NOS or use them sparingly in a new programme then the reasons need articulating and defending. Sector Skills Councils have an important role to play in disseminating information on qualification development in light of emerging NOS and government initiatives on skills development.

The development of NOS-based qualifications will be impeded by a general lack of knowledge of NOS outside of subjects where their use is mandatory or a clear requirement of professional registration. Ways need to be found to promote NOS in higher education and to show how they can be used in qualification design without implications for additional resources. Programme designers need a mechanism by which they can identify the NOS that could be used in their areas and of knowing about NOS that are in development. Given the large number of NOS available it is by no means clear to designers which standards could be linked to an award and so a database of qualifications and the standards they are linked to as well as ownership of standards should be available. UVAC is well-placed to co-ordinate such a database. Further study should also explore the methodologies by which NOS can be selected for inclusion in qualifications. The UVAC guide for curriculum designers and deliverers, *Fit for Purpose: The use of National Occupational Standards in higher education to meet the needs of employment*, is a starting point in this regard. Greater understanding of the relationships between Benchmark Statements and NOS would assist institutions, and a pilot project to map a sample of Statements against NOS is recommended.

The use of work-based modules in NOS-based programmes raises the question of the consistency with which policy and practice relating to accreditation of prior experience and learning are treated across institutions. It is important to work towards parity of policy and procedure to maximise opportunities for widening participation and equity. An enquiry into practice across a range of institutions would be a useful topic for further study.

It is important to overcome the criticism of NVQs, often emanating from HE, that because they are assessment systems, accrediting existing levels of competence can yield little new learning for many students (see Eraut, 2001). While most NOS-based programmes do not rely upon formal NVQ assessment, qualifications incorporating NOS need to be seen as being part of clear and integrated work-based learning career pathways involving new learning if they are to attract trainees and students. Pathways through Apprenticeships, Foundation Degrees and Honours degrees are an example of this.

The inclusion of formal assessment of NVQ units above a small scale creates significant implications for infrastructure and resourcing in academic departments. However, the benefits of NOS can be reached without necessarily invoking formal NVQ assessment systems and this represents the dominant model for the future. For some sectors, eg. haulage and distribution, there are few if any standards at levels 4–5. While HE programmes for these sectors could include aspects and themes present in level 3 standards, the scope for standards-related content is currently restricted at the associate professional and higher technician levels.

Employment in some skills sectors is dispersed, numbers may be small and the potential trainees may be working as sole traders or in micro-businesses. The utilities sector, for instance, has a high need for skills development and accreditation but cost-effective ways of reaching trainees/employees can be difficult to put together. Education providers face the challenge of finding economic ways of delivering NOS-based programmes to distributed learners.

As pressure to build NOS into programmes increases there will be a matching demand for staff development in the principles and practices of work-based learning and the pedagogical issues surrounding programme design and assessment issues that accompany it. Academic departments in evolving areas will need to seek ways of updating with professional practice, eg, through secondments or via networking, to access up-to-date practice experience and knowledge.

Notes to the Report

1. This report is based on information collected through interviews with staff in Sector Skills Councils, universities, other bodies responsible for education and skills and a literature review. The general principle was to use a 'snowball' approach to sampling in which promising leads were followed via referral.

2. The Further and Higher Education Act 1992 extended degree awarding powers to the former polytechnics and created one funding body for higher education. Prescribed courses of higher education are defined by the Education Prescribed Courses of Higher Education Regulations 1998. The Learning and Skills Act 2000 established the Learning and Skills Council as the funding body for further education with the power to fund 'non-prescribed higher education courses' undertaken in further education centres. Non-prescribed higher education includes higher NVQs, professional examinations and other vocational awards. The main areas are finance, accounting, management, health and care, education and training, engineering and construction (Clark 2002).

3. A distinction is made in this report between NVQ programmes and NOS-based learning programmes that do not involve formal assessment of an NVQ in whole or part but which may be aligned towards the content of one or more NVQs.

Appendix 1: NVQ framework areas and example level 4 NVQs

Framework area	Illustrative NVQ4 areas
Tending Animals, Plants and Land	Agriculture, horticulture, landscape management, forestry
Extracting and Providing Natural Resources	Managing waste collection
Constructing	Architectural technology, building control, building maintenance, building services, civil engineering site management, highways maintenance, town planning
Engineering	Engineering manufacture, marine engineering, project control, shipbuilding
Manufacturing	Laboratory operations
Transporting	Controlling aircraft and airport operations, piloting
Providing Goods and Services	Accommodation management, catering and hospitality management, distribution and warehousing operations, events management, hotel and catering management, information systems, retailing, sports and recreation, travel services
Providing Health, Social and Protective Services	Advice, care, community justice, guidance, housing, managing waste operations, occupational health and safety
Providing Business Services	Accounting, administration, banking, building society services, computer system management, environmental management, marketing, marketing research, owner management, procurement, project management, purchasing, quality management
Communicating	Book publishing, editing, graphics, lighting, music performance, newspaper journalism, periodical journalism
Developing and Extending Knowledge and Skill	Information and library services, museums galleries and heritage, personnel management, training and development

References

Becher, T. (1997) Hunting the Gilt-Edged Degree, In, In J. Brennan, P. de Vries and R. Williams (Eds), *Standards and Quality in Higher Education*, London: Jessica Kingsley Publishers, pp.157–170.

Bond, C. and Wilson, V. (2000) Bridging the Academic and Vocational Divide – a Case Study on Work Based Learning in the UK NHS, *Innovations in Education and Training International*, **37**, 2, 134–144.

Brennan, J. (2002) The New Quality Assurance System for England, *Higher Education Digest*, Summer, Issue 43, 2–3.

Brown, R. (1997) Learning from the HEQC Experience, In, In J. Brennan, P. de Vries and R. Williams (Eds), *Standards and Quality in Higher Education*, London: Jessica Kingsley Publishers, pp.122–130.

CCETSW (1995) *Assuring Quality in the Diploma in Social Work – 1. Rules and Requirements for the DipSW, Central Council for Education and Training in Social Work*, London.

Clark, J. (2002) *Non-prescribed higher education. Where does it fit?* Research Report, Learning and Skills Development Agency: London.

DfES (2003) *The Future of Higher Education*, Cm 5735, January.

Eraut, M. (2001) The Role and Use of Vocational Qualifications, *National Institute Economic Review*, No 178, October, 88–98.

HESA (2003) Higher Education Statistics Authority, www.hesa.ac.uk

Holyfield, J. and Moloney, K. (1996) *Using National Standards to Improve Performance*, London: Kogan Page.

Laughton, D. (2003) Why was the QAA Approach to Teaching Quality Assessment Rejected by Academics in UK HE? *Assessment & Evaluation in Higher Education*, **28**, 3, 309–321.

LGNTO (2002) *National Occupational Standards and National/Scottish Vocational Qualifications Survey 2001/2*, Local Government National Training Organisation.

Little, B. et al. (2003) *Vocational higher education. Does it meet employers' needs?* Learning and Skills Development Agency: London.

MacLean, D, MacIntosh, R. and Grant, S. (2002) Mode 2 Management Research, *British Journal of Management*, **13**, 3, 189–207.

Morgan, A. (2002) The utilisation of NVQs in higher education, *Education + Training*, **44**, 2, 90–98.

NCVQ (1997a) *Higher level vocational qualifications. Workshops: NVQs, SVQs and higher education*, National Council for Vocational Qualifications, August.

NCVQ (1997b) *Higher level vocational qualifications – case studies*, National Council for Vocational Qualifications, August.

NHSIA (2003) *Occupational Map for Health Informatics*, 7th Draft, September, Prepared for Skills for Health and NHS Informatics Authority.

Peregrine, P. (2002) Research on Higher Education Attitudes to N/SVQs, National Occupational Standards and Qualifications/Frameworks based on the NOS – issues that are external to Higher Education. *Proceedings of the University Vocational Awards Council Annual Conference*, York. UVAC: Bolton Institute of Higher Education.

Perkin, H. (1989) *The Rise of Professional Society: England since 1880*, London: Routledge.

QAA (2002) *Handbook for Institutional Audit: England*, Gloucester: Quality Assurance Agency.

QAA (2003) *A brief guide to quality assurance in UK higher education*, Gloucester: Quality Assurance Agency.

QCA (2000) *Case studies of good practice in the tailoring of national occupational standards*, Qualifications and Curriculum Authority.

QCA (2003) Technical certificates and the modern apprenticeship reforms. http://www.qca.org.uk/nq/framework/technical_certificates/index.asp

Swailes, S. and Roodhouse, S. (2003) Structural barriers to the take-up of Higher Level NVQs, *Journal of Vocational Education and Training*, **55**,1, 85–110.

Thomas, S. and Grimes, D. (2003) Evaluating the integration of key skills and NVQs into an undergraduate degree programme: a case study from the graduate apprenticeship initiative, *Education + Training*, **45**, 7, 383–391.

UVAC (2000) *The Utilisation of National Vocational Qualifications in Higher Education Institutions in England and Wales*, Bolton: University Vocational Awards Council.

UVAC (2003a) *Review and Development of Graduate Apprenticeship – A National Higher Education and Employment Bridging Programme*, Bolton: University Vocational Awards Council.

UVAC (2004) *Fit for Purpose: The use of National Occupational Standards in higher education to meet the needs of employment*, Bolton: University Vocational Awards Council.

Watson, D. (1997) Quality, Standards and Institutional Reciprocity, In, In J. Brennan, P. de Vries and R. Williams (Eds), *Standards and Quality in Higher Education*, London: Jessica Kingsley Publishers, pp.131–145.

Weinstein, J. (1998) The use of National Occupational Standards in professional education, *Journal of Interprofessional Care*, **12**, 2, 169–179.

Williams, R. (1997) Quality Assurance and Diversity: The Case of England, In J. Brennan, P. de Vries and R. Williams (Eds), *Standards and Quality in Higher Education*, London: Jessica Kingsley Publishers, pp.104–118.

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