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Going Dutch? changing the focus from core skills to core problems in vocational higher education

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Introduction

One of the key debates about core skills in the U.K. since the late 1970s has focused upon the extent to which they needed to be contextualised: could they be separately taught or could they only be developed in particular contexts. It is perhaps ironic then that one of the pressing requirements twenty years later is that debates about core skills themselves need to be contextualised. This is because there are unresolved tensions in current conceptualisations of core skills (or key skills) (Young *et al*, 1997).

This is in large measure due to the legacy of how core skills developed in practice. It is noteworthy that the genesis of a national approach to core skills in the U.K. was in the idea that they could be used as a developmental tool to give structure and direction to learning in the workplace (particularly on Youth Training Schemes) (Evans *et al*, 1987). Secondly, when used within education, primarily for 16-19 year olds, core skills became identified with "the more remedial function of equipping significant numbers of young people in each age cohort with basic skills and understanding that they have not acquired through the compulsory phases of education" (Young *et al*, p. 5). Thirdly, the association of core skills with the skills necessary for employment was interpreted as part of a wider attack, in which an emphasis upon skills was seen as undermining the traditional model of education, with its emphasis upon knowledge, understanding and cognitive development (Jessup, 1991; Hyland, 1994).

Now the interesting point is that when looking at the parallel development of interest in 'key qualifications' in Germany and the Netherlands, a completely different conception has been formulated. 'Key qualifications' were associated with the need to broaden and deepen vocational education and training, in relation to development of an underpinning knowledge-base and increased emphasis upon logical analytical and critical thinking. As such, 'key qualifications' raised the intellectual demands within vocational education and training, rather than being viewed in any sense as remedial. Indeed, insofar as these related to the skills for employment, they could be seen as the education and training

required to maintain an economy at a 'high skills' equilibrium (Finegold and Soskice, 1988). Finally, the German term 'Schlüsselqualifikationen' ('key qualifications') has been thought to be broadly equivalent to the English term 'core skills.' However, 'key qualifications' does not imply any primacy being accorded to a skills-based approach. Indeed, Van Zolingen (1995), in her comprehensive review, identified 'key qualifications' in terms of knowledge, insight, skills and attitudes.

So although the term 'core skills' has a specific legacy within the U.K., there is no conceptual reason why a consideration of core skills in H.E. could not be broadened from how it has been historically treated in other contexts. A switch to the term 'key qualifications' is a non-starter, simply because the conventional English use of 'qualifications' carries such different connotations in education. However, related recent ideas from the Netherlands may be of value in an English context. In particular, the attempt to use 'core problems' as a focus for the development of 'key qualifications' (Onstenk *et al*, 1990; Onstenk, 1997; Van Zolingen *et al*, 1997) may have considerable value for the development and implementation of broadly framed curricula for 'vocational' higher education in England.

I shall return later to issues around how core skills in higher education in England should be conceptualised and implemented. I have outlined elsewhere that it is possible to broaden existing ideas about core (or key) skills, when seeking to apply them to higher education (Brown, 1997). However, a bolder approach, which is more innovative and may also prove to be more acceptable to staff in higher education, would be to shift the focus to 'core problems.' Before we do that, however, we must understand more about the initial framing and subsequent development of 'key qualifications' in Germany and the Netherlands.

Key qualifications

The term key qualifications ('Schüsselqualifikationen') was first used by Mertens (1974). Mertens was studying the increasing requirements for flexibility in skilled work in Germany. He proposed that vocational education and training should focus upon the development of key qualifications, as this would improve students' labour market prospects (as they would be able to apply for a wider range of jobs) and equip them to be

"better able to react to future developments that are not wholly predictable (for example, when there are changes within a job)" (p1, Van Zolingen *et al*, 1997).

Mertens argued there were four sets of key qualifications. First, there were those aimed at giving depth to fundamental skills: "for example, logical, analytical, structured, associative and contextual thinking; critical thinking using argumentation and discussion; co-operative behaviour by employing social rules and techniques" (p2, Van Zolingen *et al*, 1997). Second, there were qualifications with an extensive horizontal transfer value: for example, being able to gather, understand, process and use information. The third set of qualifications provided breadth: for example, knowledge of technology that underpinned broad occupational groups. The fourth set related to the need to be able to continue learning, so that as experienced workers they would be able to update their skills and knowledge through access to adult education and training.

The whole thrust of Mertens' argument was that there was a need to broaden and deepen vocational education and training, and this entailed paying greater attention to cognitive and meta-cognitive skills. From 1974 onwards, however, the meaning of 'key qualifications' was extended in various ways, and Van Zolingen (1995) sought to provide a new co-ordinating interpretation of 'key qualifications', based on European experience, mainly in Germany and the Netherlands. By this time, key qualifications were not limited to the cognitive dimension and were more closely tied to an occupational context, whereby key qualifications specifically involve qualifications that are necessary to practise an occupation (Van Zolingen, 1995). Van Zolingen *et al*, (1997) then go on to provide a comprehensive definition of key qualifications as "the knowledge, insight, skills and attitudes that are part of the durable core of an occupation or a group of related jobs, with the possibility of transfer to other, new jobs within that occupation and of innovations within that occupation, which contribute to the development of a person's occupational competence and facilitate transitions within the career" (p3, Van Zolingen *et al*, 1997).

Van Zolingen *et al* (1997) go on to produce an extensive specification of the knowledge, insight, skills and attitudes that make up key qualifications. This includes technical knowledge; general knowledge of languages and computing; inter-disciplinary knowledge; cognitive and meta-cognitive skills (identifying and solving problems; abstract thinking;

intellectual flexibility; learning to learn; tacit skills); communication skills; ability to work with others; ability to plan and organise work; personal attributes such as self-reliance, perseverance and creativity; ability to adapt oneself to the corporate culture; acting as a modern citizen; and showing a critical attitude to work and one's own interests. It is apparent that this type of listing is not a restricted set of skills that should be incorporated into programmes of vocational education and training, but rather it is a challenge to the way VET is organised and delivered. One response to this challenge has been to make use of 'core problems', those problems and dilemmas that are central to the practice of an occupation (Onstenk *et al*, 1990), as a way to broaden and deepen VET in practice.

Core problems

The crucial lesson from a consideration of the development of key qualifications is that it is important to maintain a broad curricular focus and not get sidetracked into thinking of core (key) skills in a narrow or exclusive way. Any new approach should therefore be pedagogically driven, with proposed activities considered within an overarching conceptual and theoretical framework. Hence any approach to vocational higher education should address not only the development of the requisite skills and technical knowledge base, but also be underpinned by a commitment to continuing learning and professional development as a reflexive process, acknowledging the importance of critical reflection as a basis for learning. Such an approach to learning would also be collaborative with a particular emphasis upon the use of problem-based learning. Now, almost by definiton, it is desirable if vocational HE is closely related to the work context. One way to achieve this is to focus upon the `core problems' of groups of practitioners. Core problems are central to the performance of roles of particular groups of practitioners. They are characterised by uncertainty, complexity, conflicting considerations and require the exercise of judgement. These problems may have organisational, occupational and technical dimensions, and their solution may require knowledge, insight, skills and attitudes related to these dimensions, as well as inter-disciplinary knowledge, the application of high-level cognitive skills and the inter-related use of communication and other core skills. Such an approach does link to the increasing use of problem-based learning within medical, legal and engineering education. From a core (key) skills perspective this is important as this approach leads to the integrated application of key

skills in a way that aligns with progressive curricular developments that are already taking place. Key (core) skills development fits naturally within a curricular approach that utilises core problems as a key learning strategy.

A more fully developed rationale for this type of approach, which focuses upon 'core problems', would highlight that it is a reflexive collaborative learning environment making use of problem-based learning such that:

- it provides authentic contexts for learning with a focus upon real (complex) problems
- it is collaborative and dynamic, enabling learners to develop shared understandings and a sense of belonging to a dynamic community of practice, which they are helping to change and shape
- it is participative and fosters active engagement as the learners determine for themselves the issues that need to be addressed when facing core problems. They can draw upon the knowledge and skills of others in facing these issues and also create their own learning agenda to fill any gaps in their knowledge and understanding
- it supports learning which is highly relevant, because the learning is focused upon issues which are perceived as pressing by practitioners
- it gives (possibly isolated) individuals the opportunity to think through problems as part of a team
- it supports the development of creative and flexible approaches to problems
- it supports the development of contextualised critical learning
- it supports reflection upon and review of the learning process as well as of the outcomes.

Reflection upon core problems can give insight into current practice and provide ideas as to how they might tackle similar problems in future. Such reflection is critical in two respects. First, it is necessary if learners are to look beyond current practice and to help shape how such problems are tackled in future. Second, it can act as a stimulus to creativity and innovation, not least because the learners have learned the value of applying a reflective approach to the development of their own practice and expertise. Such an approach not only increases the likelihood of significant learning, it also provides a framework for subsequent continuing professional development in which it is likely that

processes of new knowledge creation may be facilitated. In this sense it helps those that are learning within vocational higher education to feel they are moving towards assuming a full position within particular 'communities of practice' (Lave, 1991), and a subsequent continuing commitment to explore, reflect upon and improve their professional practice (Schön, 1983; 1987).

The explicit linking of processes of learning and reflection within vocational HE to 'core problems' at work does not, however, mean that this type of work-related learning is the sole curriculum driver: not least because the essence of competent professional practice is that the practitioner is able to respond intelligently in situations which are sufficiently novel that the response has to be generated in situ (Elliott, 1990). The collaborative dimension too needs stressing (Lave and Wenger, 1991), as the concept of work-based learning sometimes relies heavily on individualistic processes of reflection (Winter and Maisch, 1996). Further, Eraut (1994) highlights how a focus upon workplace practice cannot necessarily be equated with a capacity to understand the ideas and concepts that inform such actions. Work-related learners should seek to ensure that significant intellectual development takes place. One way of raising the intellectual demands is to make use of problem-based learning where the focus is upon core problems of groups of practitioners (Onstenk, 1997), acknowledging the contribution theoretical concepts can make to assist individuals to understand what they are doing and why work practices are subject to change (Engeström, 1995). Another advantage of a focus upon 'core problems' is that it highlights the way professionals working in one sphere increasingly have to deal with issues that are not necessarily within a single disciplinary compass, and that they have to be able to work with colleagues and in groups with different kinds of expertise (Engeström, 1995). Young and Guile (1997) argue that increasingly professionals need to possess a connective, rather than an insular, form of specialisation, which stresses the ability to look beyond traditional professional boundaries.

The focus upon core problem can help draw attention to another aspect of developing expertise which lies in the ability of the professional to handle the complexity and inter-relatedness of issues. This has at least three dimensions. One is the form of the representation of knowledge structures into mental models (Soden, 1993) or networks (Simons, 1990), which are capable of handling increasing complexity and inter-relatedness

of issues. The second dimension relates to the way an individual is able to hold and inter-relate ideas from different spheres (practice, research and theory) to get a fuller, deeper contextualised understanding of professional issues, which affect policy and practice. The third dimension then revolves around the capability to apply that contextualised understanding to particular situations and, if appropriate, to translate that understanding into action.

Core problems can be used as a facilitator of both practical and theoretical learning. That is, rather than becoming locked into current modes of practice, 'theoretical learning' is also developed through applying the concepts for analysing the problems that arise for professionals at work and for making explicit the assumptions underlying existing practice (Guile and Young, 1996). This conceptual knowledge can then be used to underpin reflection upon practice at a deeper level than just 'theorising' practice. Such conceptual knowledge can have both explanatory power and be applied to (changes in) practice. It therefore complements the development of practical learning, based upon reflection on practice. Crucially, however, the development and application of theoretical learning also facilitates a forward-looking perspective: enabling thinking about how practice **might** be developed in future. Indeed, a base is laid whereby the subsequent application of the processes of research, review and reflection in new contexts can lead to the creation of new forms of knowledge (Engeström, 1995). The use of core problems within vocational HE can therefore act as a springboard for the:

- exploration of and reflection upon professional practice.
- development of skills, knowledge and understanding (of critical reflection) necessary to evaluate and review professional practice.
- need to understand processes of change (as practice increasingly takes place in complex and dynamic contexts).
- ability to create new knowledge.
- development of theoretical knowledge to underpin and complement reflection upon practice.
- study of the interplay between theory and practice.
- need to be able to transfer skills, knowledge and understanding from one context to another.

- ability to handle complexity and inter-connectedness of issues (including through the formulation of mental models, schemas or networks).
- development of contextualised understandings.
- translation of understanding into action, as appropriate.
- further development of communication skills.

Concluding discussion

Some of the issues associated with the way the core skills debate has been framed in England in the past have to be tackled if a more productive way forward is to be found. It is unfortunate that in certain contexts an emphasis upon core skills has been interpreted as downgrading the value of technical (subject or occupational) knowledge. This association is not present in debates in other European countries about the development of 'key qualifications', and the polarisation of arguments around whether curricula should be primarily about the development of knowledge bases or process skills is unhelpful, not least because mastery of a substantive knowledge base is itself an important process skill. The obvious solution is that core (key) skills development should be integrated into and contextualised within development of disciplinary (or vocational) bodies of skills, knowledge and understanding. However, it should be recognised that this has often proved problematic in practice in the past (Wolf, 1991). This leads on to issues associated with questions of scale : a number of curricular innovations work well in particular contexts or with relatively small numbers, but give considerably less benefit when applied across the curriculum as a whole. This links to pragmatic considerations. Advocates of the application and integration of high level key skills should recognise that to do this well is demanding of time and human resources. Hence they should not seek to impose this approach on all areas of the curriculum in a standard way, and they should initially concentrate their efforts in subject areas with a strong vocational orientation. The latter choice is not only because this is the area in which the benefits are greatest, but because this goes with the grain of other curricular developments in such subject areas, including interest in problem-based learning, project work, industry links and so on.

The lessons from Europe are that where 'key qualifications' are broadly defined with an emphasis upon increasing cognitive and meta-cognitive skill demands in vocational

subjects, then there is no implicit reproach to more academic subjects, such as history because such subjects have traditionally concerned themselves with cognitive skills development. The whole development of the 'key qualifications' debate has been that the closer HE programmes get to vocational areas, then the more appropriate an emphasis upon occupational key qualifications becomes. In vocational HE learners can benefit from increasing exposure to core problems of the profession, which draw upon occupationally relevant knowledge, insight, skills and attitudes in an integrated way. Such a focus upon core problems can be part of a powerful learning environment, which is drawing upon ideas about the value of problem-based learning, joining communities of practice, situated learning and collaboration.

That key qualifications elsewhere in Europe have been much more broadly drawn than core skills in England has had a paradoxical effect. The breadth of key qualifications has meant that particular combinations of key qualifications are interpreted as applying to much narrower (occupational) fields of action. That is, if key qualifications comprise knowledge, insight, skills and attitudes, and have substantive cognitive, meta-cognitive, personality, strategic and socio-communicative dimensions (Van Zolingen *et al*, 1997), then the combination and application of these only make sense in particular occupational contexts. In contrast, the more narrowly defined core skills in England were initially regarded as general skills applying across a much wider variety of contexts. Subsequently, core skills have been developed in a number of different contexts, and fundamental tensions about what they are remain. Renaming core skills as key skills has not resolved this tension, and debate continues over their function, definition and appropriateness in different contexts. One resulting problem is that there is pressure to produce over-ambitious prescriptions, whereby attempts are made to apply 'key skills' in a similar way to too many contexts. Personally, I favour the logic underlying the use of 'key qualifications' elsewhere in Europe, whereby the conception is broader and the application is narrower, because their use has to be contextualised, whether in a disciplinary or vocational sense.

However, the use of 'key qualifications' is a non-starter in England and, for good or ill, the current debate is about the application of key skills to higher education. My view would therefore be that key skills should be broadly defined (following the approach of Van

Zolingen *et al*, 1997) and that they should be embedded within a broad, developmental approach to vocational education and training at higher levels in a way that complements, rather than undermines, other progressive developments within education, such as the use of problem-based learning, situated cognition and collaborative learning. Additionally, key skills development would need to be integrated with the development of technical knowledge, skills and understanding. Now, if this is the purpose, then this could be more effectively achieved by focusing attention upon 'core problems' rather than 'key skills'. The attractions of this are manifold but two benefits stand out. First, the most appropriate arenas of action are those areas of vocational higher education, which have already been using complementary parts of the teaching and learning 'mix'. Second, the importance of contextualisation, whereby key skills have varying relations and combinations with the technical knowledge base, means that subjects should not be judged one against another as to how well they cover a particular key skills specification. Indeed the notion of core problems is transferable in an unthreatening way, as each disciplinary or vocational area would have to define these for themselves. Shifting attention from core skills to core problems could therefore act as a stimulus for a reflexive curricular review, with each curricular being expected to own the process of review, as they search for an appropriate way forward.

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