

competencies and the curriculum

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INTRODUCTION

This paper will address three connected issues that together serve to make problematic the relationship between competency standards and curriculum. The first of these is the different ways that competence is conceptualised. This represents the major distinguishing feature of different kinds of competency standards. This point is crucial because the current debate in Australia about the role and value of competency standards has highlighted the fact that there is a lot of confusion about precisely what competence is. Coupled with this confusion has been the rapid move from defining competencies for work to writing education and training curricula in competency-based terms. More recently, professional development programs and some higher education courses have also been written in competency-based terms. However, the relationship between competencies required for jobs and professions and competencies written as part of curriculum documents has not been adequately addressed. This is the second issue that we will discuss in this paper. Thirdly, there are the still somewhat unclear links and connections between more generic competencies, such as the Australian Mayer key competencies, and both the competencies of vocational curricula and some less general, though still somewhat generic, workplace competency standards. Together, these three intersecting issues provide plenty of challenges for curriculum designers as well as offering fertile scope for innovation and creative course delivery. This paper is an attempt to identify the burning issues that need further investigation and research in this area.

KINDS OF COMPETENCY STANDARDS

The 20 or so professions in Australia that have set out to establish competency standards have employed an integrated conception of competence (Gonczi, Hager and Oliver, 1990; Heywood, Gonczi and Hager, 1992). According to this approach, the 'integrated' conception, competence is conceptualised in terms of knowledge, abilities, skills and attitudes displayed in the context of a carefully chosen set of realistic occupational tasks which are of an appropriate level of generality. Such an integration of attributes with tasks of an appropriate level of generality accords with the root meaning of the concept of 'competence' (Hager and Gonczi, 1993: 36-8). It also accords with the view of competence propounded in key Australian policy documents (Hager and Gonczi, 1993: 38-40). This integrated approach to competence seeks to link general attributes to the context in which

these attributes will be employed. It accepts that complex combinations of attributes (knowledge, attitudes, skills, etc.) underpin occupational performance. A feature of this integrated approach is that it avoids the problem of a myriad of tasks by selecting key tasks or elements that are central to the practice of the occupation. The main attributes that are required for the competent performance of these key tasks or elements are then identified. Experience has shown that when both of these are integrated to produce competency standards, the results do capture the holistic richness of the practice of an occupation, including such things as professional judgement, in a way that other approaches could not. This approach also allows for there being more than one appropriate response in a given situation, as well for the framing of unique responses to changing contexts.

Several important implications flow from the integrated definition of competence:

(a) Performance is what is directly observable, whereas competence is not directly observable, rather it is inferred from performance. This is why competencies were defined as combinations of attributes that underlie successful performance.

(b) Both attributes of the practitioner and performance on elements or key occupational tasks are essential ingredients of the above definition of competence. This means that attributes of individuals do not in themselves constitute competence. (In the rest of this paper we will call the view that attributes alone constitute competence the generic view). Nor is competence the mere performance of a series of tasks. (Similarly, in the rest of this paper we will call the view that successful performance of discrete tasks constitutes competence the task-based view). Rather, we claim, the notion of competence integrates attributes with performance.

Since integrated competency standards are based on the idea that competence is a construct which is not directly observable, but rather is inferred from successful performance, it is clear that performance will be important for assessment in many cases. Some of the competency standards, however, will be less easily assessed through performance than others. Equally important will be the requirement that sufficient evidence be gathered to justify the inference. While evidence from performance will be important to assessment, it often will be supplemented by other kinds of evidence. This is particularly the case with a complex knowledge base which may not be able to be inferred from performance.

We would argue that the kind of integrated competency standards described above are the most educationally valuable. However, all types of competency standards can be misused and misunderstood in ways that

would hinder education and training. Thus the appropriate relationship between competencies for work and competencies for curricula is a major contemporary concern.

How competency standards can BE MISUSED

Course development:

Competency standards of whatever kind can hinder course development if the competency standards are confused with a curriculum document. That the two things are different becomes apparent when we realise that competency standards are a description of, or incorporate some of the things that a graduate should be able to do at the end of the course, whereas a curriculum document is a description of what is to be learnt and how it is to be learnt, as well as a statement of what people should be able to do at the end of the course. In other words, a curriculum describes a developmental process by which certain outcomes will be achieved at the end, whereas competency standards describe the outcomes, or provide a framework for the outcomes without specifying how they are to be learnt.

Considerations such as these should lead educators faced with the translation of competency standards into curriculum to ask some pertinent questions. However, it seems that these questions are often not addressed. A task-based view of competence tends to assume that the units and elements of the competency standards are the units of curriculum content. and that these units and elements are finished

products. Thus the relation between the competency standards and the curriculum becomes a simple one-one correlation. An approach of this sort seems to lie behind the National Training Curriculum for the metals industry which features a diversity of modules most of which focus on skills. The idea is that candidates can select an appropriate mix of modules to prepare them for a particular type of work role in the metals industry. By adding further appropriate modules, workers can then progress to other more skilled (and more highly paid) positions (see Mellors 1994). Behind all of this is the assumption that the discrete tasks are enough to together constitute a meaningful whole. A generic view, on the other hand, tends to focus on very broad generic attributes such as analysis, planning, communication, etc. (See, e.g. Klemp 1988). On this view, the actual curriculum content hardly matters, so long as these kinds of attributes are being fostered and developed. (For an unusually well-planned attempt to integrate the development of these generic attributes into courses see Alverno College Faculty (1985). While the idea that such attributes can be readily developed in a decontextualised way, and then later applied to any appropriate situation, sits well with the jaundiced view that the educational mainstream typically takes of vocational education (Hager 1994), it is hardly consistent with what we know about transfer of

these attributes to novel situations.

Someone taking an integrated view of competence would be more inclined to question the assumptions implicit in the previous two views of the connection between competency standards and the curriculum. Once there is a focus on what major tasks need to be performed, as well as on what are the underpinning knowledge, skills and attitudes needed to perform them, then some rather obvious questions arise. Which knowledge, skills and attitudes need to be developed prior to beginning to learn to perform the major tasks? Which parts of the competency standards are best taught as content? Which are best taught as process? For example, if teamwork (say) is important in an occupation, is it better to have a teamwork module in the course or is it better to have a series of projects that require teamwork in other parts of the course? Which parts of the competency standards are most appropriately reinforced via assessment? What is the role of formative vs. summative assessment in the delivery of the curriculum. (For examples of competency-based curriculum that addresses these questions see Johnstone 1994a and 1994b. See also Whiteman 1994 for an account of how broad generic competencies in a general science course can benefit significantly from contextualisation).

Teaching:

Similar arguments apply to teaching as applied to course development. Teaching is an important part of the process that aims to arrive at the outcomes specified in the competency standards. However, as the integrated view of competence suggests, various attributes, such as knowledge and skills are typically prerequisites for performances specified in the competency standards. Thus it will be a waste of effort to try to teach the elements of the competency standards one by one unless the groundwork of requisite knowledge, skills, etc. has already been laid. In some cases at least, this requires a significant developmental process. Some of the requisite knowledge, for example, will be procedural in nature and readily acquired in the short term; however, typically, there will be required, in addition, conceptual knowledge whose development and understanding may take a more extended and systematic learning process (see, e.g. Neeson 1994). This suggests that the competency standards, as a guide to actual teaching activities, will be more useful in the later, rather than the earlier, stages of a course. This is when courses such as vocational courses are usually more concerned with actual workplace conditions anyway.

If, as argued above, task-based competency standards are invalid, the futility of teaching element by element from such competency standards should be obvious. Rather than raising the skill levels of Australia's workforce, the opposite would be the result. In extreme versions of this task-based approach, teaching is eliminated as students work at their own pace on discrete, pre-packaged modules. The teacher becomes

simply an assessor to certify when the learner is ready to move on to the next module. To the extent that the generic view of competence gives advice on teaching, it is advice about process rather than content. For example, it would recommend an emphasis on problem solving, communication, analysis, etc. Too often, however, the assumption is simply that the content covered in the course will take care of this.

Assessment:

Task-based competency standards are attractive to some because they offer the possibility of simple element by element assessment by direct observation of the performance of tasks against a check list. This view of competency-based assessment may have appeal to some TAFE teachers and industry trainers, meshing as it does with the behavioural objectives approach to curriculum development and teaching with which they are familiar. However, as discussed above, such assessment raises invalidity problems of several kinds. In general it assesses superficial aspects of an occupation and ignores what is involved in quality performance, and the same issues arise if the competency standards are simply transferred one to one to the curriculum. Experience has shown that this approach leads to either unacceptably large amounts of time being spent on assessment of a myriad of discrete tasks and/or teachers and trainers focussing on one task: teach and assess, then the next task: teach and assess and so on. The more holistic assessment that flows from an integrated approach to competence will be discussed in the next section.

How competency standards can help education AND TRAINING

Course development:

Accepting the point that competency standards are summative rather than formative, and hence are not a curriculum document, they are nevertheless a useful guide for course development. When competence is conceptualised via the integrated approach in terms of knowledge, abilities, skills and attitudes displayed in the context of realistic occupational tasks, they offer very valuable guidance for course development. For the early parts of the course, they suggest the kinds of underpinning knowledge, abilities, skills and attitudes that graduates need. For the later parts of the course, they suggest major outcomes that potential graduates should be close to attaining.

However, if it is the case that competency standards describe holistically a job or profession, then the question needs to be asked whether a course or indeed a series of courses could be expected to cover all the relevant competencies. Now that we are in the era of 'lifelong education', and education and training are integral parts of career paths across the diversity of the workforce, the relationships between formal education (in TAFE colleges or universities); professional development and on-the-job training and experience need to be delineated and planned much better than they have been in the past.

Competency standards may define categories of novice/experienced/highly experienced. The combination of knowledge, skills and attitudes at each of these levels may be acquired in different ways. It may be the case that formal courses are sometimes the most appropriate, for others experience may be the best way to acquire them. In any case there is

not a one to one relationship between competency standards and curricula. The example of adult basic education teacher competencies will be discussed below in relation to these issues.

Teaching:

Following on from the discussion above there is more than one way to teach effectively to achieve some specified outcome. Hence, though the competency standards describe the major expected outcomes of successful completion of the course, they do not prescribe in detail the teaching strategies that will best lead to these outcomes. Thus, for providers there is as much flexibility as ever to decide what to teach when and how to teach it. However, assuming that there is room for improvement in most existing courses, a good set of competency standards will provide invaluable guidance on appropriate methods of delivery. In particular they might suggest ways that the processes of teaching and learning employed in the course could more systematically foster and develop the broader, more generic aspects of the competency standards.

Assessment:

In the early stages of courses foundational knowledge and a range of enabling skills, which provide an essential basis for the future development of occupational competence, need to be acquired. Whenever this is so, the competency standards will not be immediately relevant to course assessment practices. This is because, as already noted, the competency standards describe competence as a major expected outcome or achievement of successful completion of the course. They do not describe the developmental process by which competence is acquired. At best the competency standards will suggest some of the broad generic capacities that the types of assessment used throughout the course would do well to encompass.

So whatever way the curriculum is constructed, attainment of appropriate developmental stages, rather than of full occupational competence, will be most typically the concern of assessment. However in later stages of courses, assessment against competency standards is likely to become increasingly important. For example competency standards can suggest effective ways of assessing the application of knowledge as against its mere recall (see Wolf 1989). Since the later stages of many vocational education and training courses already feature performance assessment of various kinds, competency-based assessment is a continuation of something already familiar to teachers and trainers. (The principles of the holistic assessment that is implied by the integrated approach to competence is outlined in Gonczi,

Hager & Athanasou 1993 and in Hager, Athanasou & Gonczi 1994).

COMPETENCIES, CURRICULUM AND ADULT BASIC EDUCATION

This section of the paper will focus on a specific profession in order to highlight some of the points discussed more generally above. Adult Basic Education (ABE) has undergone rapid changes in the 1990s as a result of International Literacy Year (ILY) activities and economic reform. The expansion of provision and targeted funding, especially in workplace contexts, has led to the need for an increased number of higher education courses and professional development programs for practitioners. At the end of the 1980s there was one specialist, postgraduate course for Adult Basic Education teachers in Australia at the University of Technology, Sydney, whereas at the end of 1994 there are up to a dozen. As well, there is a national professional development strategy and a series of professional development modules have been and are being developed for delivery across all states.

When the Department of Education, Employment and Training provided

funding for a project called What is a Competent ABE Teacher? in 1991 it was an opportunity to research and describe the profession, and the researchers chose to do this in competency-based terms. (See Scheeres et al 1993). The approach taken in this project was the integrated approach to developing competency standards outlined above. One major decision made early in the project was that the focus would be experienced teachers, not those entering the profession. This is a significant point when considering curriculum development for relevant teacher education courses: what is the relationship between the competency standards which refer to experienced teachers and the curriculum which may be for teachers new to ABE in some cases and experienced but unqualified teachers in other cases? The added complexity here is that, unlike most other professions, it has been possible to work in the ABE field with relevant, related qualifications but not necessarily specific, ABE qualifications.

In developing higher education courses the range of possible students has to be taken into account: unqualified and very experienced through to unqualified with no experience. Curriculum developers are writing curricula in competency-based terms and they are using the ABE competency standards to help them design courses and express outcomes. They have not, and indeed cannot, fall into the trap of a one to one correlation between the standards and the curriculum outcomes.

At the same time professional development programs are also being written in competency-based terms. These programs cover a variety of aspects of professional practice and range from three hour programs to ones running for a full semester (eg Adult Literacy Teaching: eighty

one hours). In an increasing number of cases the professional development programs are articulating into or gaining credit towards a higher education course. Many of the professional development programs also have the ABE competency standards as an integral part of their design and assessment.

In the midst of all this development key questions regarding the relationship between competency standards and curricula have emerged which have not yet been resolved. The first of these is: if there are competency standards developed for the profession, and curricula for higher education courses and professional development courses should relate to these standards, just what is the nature of that relationship? Some areas of competence may be best introduced in teacher education courses, developed in professional practice and perhaps further extended and consolidated through professional development programs. Others might be exclusively the domain of professional practice or formal courses and so on. In the ABE field, and, we would argue, in other fields, this question has not even been asked, or, if there is a realisation that it is an issue, it has not been substantially addressed.

A second related issue has arisen in using the competency standards as the basis of competencies in curriculum documents. Short, professional development programs may have the same or similar competencies to be achieved as longer teacher education courses. (Recognition of prior learning is not being discussed here even though it may, in some cases, account for the same competency validly being part of both short and long courses). In ABE the professional competency standards are often written into the professional development or teacher education document in such a way that it is clear to the reader which of the standards have been related to which curriculum outcomes.

This issue is highlighted in the example below which outlines two

elements from one area of competence in the ABE competency standards followed by outlines of the related competency-based outcomes of a TAFE professional development program and a University graduate diploma course:

The Adult Basic Education Profession and Competence

3 Area of competence: Managing Learning Situations

3.1 Element: Uses knowledge of curriculum theories and curriculum documents to develop and implement

a program/curriculum compatible with individual, group and program needs

3.3 Element Adapts curriculum in the light of changing circumstances and

changing student needs

Adult Literacy Teaching: a professional development course *
(81 hour course delivered through TAFE and in conjunction with some
universities)

Strand: Program development

Related to 3.1 and 3.3 Understands and applies theories and models of
curriculum construction, monitoring, evaluation and development to
design, implement and continuously improve A(L)BE courses in response
to changing individual, group and program needs

Recognises and critiques the assumptions about learning and teaching
and learners and teachers embodied in curriculum statements

(* 1994 Draft of the course as revised for flexible delivery)

Graduate Diploma in Adult Education (Adult Basic Education)*

(2 year part-time post graduate course offered at the University of
Technology, Sydney)

Subject: Curriculum theory and practice

Module 4 Curriculum implementation

Topic: Course planning

Related to 3.1 and 3.3 Participants will be better able to:

- develop a learning program based on a learner profile
- develop a learning program based on the learner's educational
background, cultural factors, gender, inclusiveness
- modify and adapt a learning program over time, in consultation with
the learner
- assist students to identify short and long term goals and incorporate
this into the learning program
- apply theories of language, numeracy and curriculum to program
planning

(* 1993 Revised course development document)

It is clear that there is not a one to one correlation between the
competency standards for the profession and the curriculum documents,
nor should there be. However, in both curriculum documents the
elements have been printed alongside the curriculum outcomes to
highlight that there is a relationship. The nature of that
relationship is not clear nor is the relationship between the two
courses in these areas. By using the same elements from the competency
standards a close relationship is suggested. This is particularly
important in this case as Adult Literacy Teaching is the major
professional development course seeking formal recognition by way of
advanced standing into ABE teacher education courses.

KEY COMPETENCIES: PROCESSES AND PRODUCTS

In this paper we have discussed a task-based view of competency and a generic view of competency. We would like now to focus briefly on the generic Mayer key competencies and their relationship (or possible relationship) to curricula.

The key competencies are:

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

It is clear that these competencies are both de-contextualised and process-oriented. As has been argued earlier in this paper mapping decontextualised competencies onto either work or a curriculum is not valid. There are, however, ways of incorporating generic competencies into curricula in meaningful ways. They should be contextualised and they may be stated as integral to a particular product or task. Thus, for example, Collecting, organising and analysing information becomes Collect, analyse and organise information relevant to scientific technical work in a Science Industry Orientation curriculum (Johnstone, 1994a: 2). Thus, the skills embedded in the processes of collecting, organising and analysing are related specifically to a context - the context which is the focus of the curriculum as a whole.

Another way of formulating the competency would be: Collecting, organising and analysing information in order to write a scientific, technical report. In this hypothetical example the process and product are integrated. The competency explicitly includes the skills involved in collecting, organising and analysing as well as the finished product and thereby some of the processes involved in learning are given prominence. It is not just the task or product which can be ticked off in an assessment; rather a more holistic view is necessary.

In school education where the key competencies are also important, it is interesting to see how they have been integrated into existing curricula. Because the key competencies are process-oriented it has, on the whole, not been difficult to do this. At first, though, many school educators believed that they would have to assess the Mayer competencies as well as, and separate from, other learning outcomes. However, when it was realised that the key competencies were to be seen as part of learning outcomes in particular subjects or key learning areas it was not long before examples of contextualising the generic competencies and linking processes and products explicitly were developed.

Summary

Educationally valuable competency standards, if used in appropriate ways, will help significantly with course development, teaching strategies, assessment strategies, etc. However competency standards of any kind, if used inappropriately, can hinder the aims and processes of education and training. The shift from competency standards for work and professional practice to competencies for curricula has been somewhat glib. Stakeholders are beginning to realise that the relationship is more complex than it was assumed. Even if the integrated view of competence argued for in this paper is chosen as the

most useful and the most valid, the issues emphasised here to do with the relationship between competency standards, work experience, professional development and higher education courses need collaborative research and development. At the same time, notions of the importance of generic competence are quite powerful. Therefore, how generic competencies can be contextualised and integrated into a holistic view of competence needs to be pursued. This paper has raised issues and begun to explore them - the next steps need to be taken.

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