COMPETENCY BASED ASSESSMENT: IS THE CASE PROVEN FOR APPLICATION TO BUSINESS PROGRAMMES?

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"The reforms of today give rise to the evils of tomorrow. That is the history of the human race"

Kristol: 1995:73

ABSTRACT

This article examines the origins of competency based assessment, including its philosophies and intentions. The body of literature which supports and which criticises it is critiqued, together with the experiences of those who have been involved in the practical implementation of competence based programmes. The realities of implementing NZQA's intentions are then reviewed in the light of the experiences of staff involved in Framework based programmes. Questions are raised regarding the suitability of the New Zealand Diploma in Business in providing a base for a more holistic definition of competency based business education.[1]

INTRODUCTION

This article is intended to contribute to the debate over the development of Framework based unit standards for a range of business qualifications and the use of competency based assessment in particular. The article has attempted to review the academic literature in order to provide a critical analysis of a key foundation of the Framework, ie competency based assessment. It traces the history of competency based assessment, its theoretical foundations, its strengths and weaknesses as identified by British and Australian academics when competency based assessment was introduced in their markets. The article then attempts to identify ways in which competency based assessment may be able to "work" effectively and efficiently should the proposed Framework based business qualifications be introduced in New Zealand. The article raises concerns regarding the implementation of key aspects of the Framework itself within educational institutions such as polytechnics and particularly in business programmes taught at higher levels of the Framework.

Educators are expressing increasing frustration at what is perceived to be a total disregard by The New Zealand Qualifications Authority (NZQA) of their concerns in terms of the emerging business Framework units; in particular the atomising of assessments, de-emphasising of knowledge, lack of grading and a myriad of emerging problems relating to assessment issues and administration/record keeping requirements.

NZQA appears to take the stance that educators' protests are evidence of a resistance to change per se and of the refusal of education to adapt to meet the changing needs of industry.

Industry, in the early stages of the development of the Framework, appears to have supported the concepts of modularity, the ability to provide recognition of prior learning and of portability between qualifications (eg Smith 1992:7). In particular the ability of the new structure to measure whether students were able to apply knowledge and skills in 'the real world' was supported (eg NZ Employers Association 1993:2).

Indeed, if industry supported the Framework development for these reasons, educators could well examine the perceptions industry had about the existing system. Irrespective of whether the debate concerns old world qualifications or 'new world', the question must be asked as to whether educators were listening to the concerns and requirements of the future employers of graduates or ensuring that industry understood the structure and intended outcomes of existing qualifications.

THE FOUNDATIONS: COMPETENCY DEFINED

Although the competency based movement has assumed prominence over the last 20 years, its origins go back to at least the 1920's. Competency per se was recognised by institutions such as the Board of Technical Education in New South Wales who issued Certificates of Competency as far back as the 1880's (eg Battye, 1993). In the 1920's, educational reforms, particularly in the United States, were linked very closely with the industrial business models of Taylor and others. Followers of the Taylorist/social efficiency school of thought (eg Beevers:1993) embraced the competency philosophy, supporting an emphasis on specific performance outcomes derived from a task analysis of the functional content of particular occupations. This focus on outcomes de-emphasised concern for how the capabilities for such outcomes could be developed, observable behaviour was paramount – not knowledge and understanding (or other cognitive attributes).

There are many definitions of competency, some of which have superficial appeal eg: "...the ability to perform the activities within an occupation or function to the standard expected in employment." (NOOSR 1992:3) 'Performance based models are concerned with results (or "outcomes")' (NOOSR 1992: 22-3; Johnston 1992: 5-6). Such an approach has an obvious political appeal to it with its emphasis on practicality and the assessment of performance rather than knowledge alone. It was this appeal to practicality and usefulness that played a large part in the launch of the National Vocational Qualifications system in Britain in 1986. At that time, NVQ's were designed to accredit existing workplace skills and had little to contribute to training programmes designed to foster high-level, transferable skills. Their subsequent grafting on to existing vocational courses has been less than an overwhelming success. Hyland (1996) has estimated that NVQ's cover only four per cent of the work force and have had minimal impact on training, employment practices and economic productivity (quoted in Weekly Daily Telegraph 27 March, 1996 at page 17). However critics such as Pennington (1994:70) caution that "a competency-based approach is unsuitable for education because it ignores educational process and focuses only on particular measurable, observable practical outcomes".

The development of employment-related competencies has played an increasingly important role in education in the 1990's in both Australia and New Zealand. It has been argued (eg: NZQA, 1990) that placing emphasis on facilitating entry into/or progression in employment, based on industry developed standards which are centred on objective, specified outcomes

benefits society. Educators are made more accountable for desirable outcomes based on the current needs of an economy/industry as determined by the industrial community itself.

THE NEW ZEALAND COMMITMENT TO COMPETENCY BASED ASSESSMENT

NZQA signalled their intention to move towards competency based assessment from the earliest stages of the development of the National Framework development

> in recent years world wide, there has been growing support for basing assessment of students on clearly defined performance criteria. This has resulted in a shift from norm referenced assessment (measurement of a person's achievement against others being assessed) to performance based assessment (measurement of a person's achievement against previously established standards). This approach is central to the modular organisation of learning (NZQA 1990:10).

NZQA cite the endorsement of government policy makers for this approach ie: "(NZQA) will be based on a student-centred approach to learning and assessment which stresses the competency of students to understand and apply their acquired knowledge" (Learning for Life: Two (1990) 4.2.4.)

The assessment philosophy was spelt out in more detail in a subsequent publication ie:

> competency-based assessment measures the learner's skills and knowledge against predetermined standards (that is, the learner can or cannot demonstrate the competence); has no grades or ranking; is most appropriate for courses which have a comparatively large number of discrete skills (eg: mathematics, dentistry, joinery) (NZQA, 1991:54).

There are two interesting aspects of this statement: the first is that skills and knowledge at this point were still linked. The second is the implicit acknowledgment that competency based assessment may not be universally applicable to all subject areas.

By 1993, skills and knowledge appear to have become separated, eg in the NZ Employers Association "Assessing Competences" guide prepared in conjunction with NZQA, assessment does not include direct assessment of knowledge, only of "evidence of a candidate's ability to perform the activities and achieve the outcomes described by the elements of competence in a unit" (NZ Employers Association, 1993:12).

BENEFITS OF THE 'NEW' WORLD

Competency based assessments have a number of perceived advantages over the 'old world'. Once assessment tasks have been decided and developed, an exercise which in itself appears to be incredibly time consuming, the conducting of the actual assessment task on students is relatively easy. No longer do lecturers have to make individual judgements regarding marks to be allocated for the quality of an assessment. A set of observable outcomes are simply checked and the decision is simply 'competent' or 'not yet competent'. Whether of course this is in the best interests of any of the parties involved is not intended to be debated here – we simply highlight the ease of administering this type of assessment. Experience indicates that the recording of assessment for moderation is infinitely harder. Evidence for assessment has to be recorded against each performance criteria, across each range statement for each student according to the strict NZQA model.

A second, advantage is more significant: under the 'old world' students could be extremely weak (dare we say incompetent?) in some areas, but achieve passing grades through making up marks in other areas. Framework based units ensure that students must come up to a specified minimum standard in all areas contained within an unit, and to be able to remedy specific deficiencies without repeating an entire course of study.

A further advantage is that learning outcomes have to be more precisely defined and therefore providers are made much more accountable, added to which is that learning outcomes are developed by a process which involves industry; therefore 'provider-capture' is no longer possible!

NZQA has placed the onus on unit writers to specify the degree of accuracy required in a given unit and to specify critical areas which *must* be successfully completed, versus the degree of latitude which may be permitted in non-critical minor areas.

We again emphasise the superficial appeal of this approach to potential employers in that they can be assured that students have achieved a specified level of "competency."

ASSESSMENT PROBLEMS IN EMERGING NQF UNITS

(a) *Separation Of Knowledge And Skill*

One of the main problems identified by education providers with the development of Framework units has been the lack of knowledge assessment and the associated possibility that students may be able to rote learn and gain 'competence' without understanding why something is done. This could seriously affect their ability to transfer their skills to new situations. Toohey et al (1995:86) make the case for the integration of theory and practice within the context of questioning what exactly constitutes 'being competent': Griffin (1995:38) questions whether current competency based assessment can accurately measure competence, as the way that assessments are made implies that there is one 'right' outcome or 'right way' to perform a task, something that is rarely true in the 'real' world – refer to definition on page 82.

Mitchell (1990:63) argues that occupational competence may include:

> reproducing the knowledge content in straightforward ways; . . . selecting information in order to product the correct answer; . . . producing a solution by weighing and evaluating complex and potentially competing factors to give an optimum solution or by synthesising knowledge in a new way to produce new meanings or solutions.

There is a focus on assessing not just individual elements but a number of individual performance criteria within each element. There is no emphasis given to the integration of elements in order to demonstrate the ability to analyse and synthesise information in order to make often complex decisions and recommendations is a major concern. "Many of the most important aspects of (vocational) education are not directly measurable" (Gleeson & Hodkinson, 1995:11).

A further warning is given by Penington (1994:70) who asserts that:

> 'competency' is by definition a behavioural 'construct' related to actions. When applied in assessment and viewed as the prime outcome of education, it will inevitably down-grade the importance of knowledge and higher educational skills and will distort the balance of curriculum and the educational process.

In some areas of the Framework, knowledge has disappeared from units and is merely inferred through practical skills. It is essential that knowledge underpinning skills be included as part of units and their assessment, unless providers can be certain that simple behavioural tasks are acceptable without checking for underlying understanding such as might be required should skills need to be transferred to new and different structions. Knowledge provides a breadth of context and understanding which facilitates the transfer of skills and the development of new ones. It is the basis for critiques and analysis and new learning.

(b) ***Competence Versus Merit***

A fundamental philosophy of the Framework has been to move away from assessments where outcomes are reported in marks or grades, allowing ranking of students relative to other learners. Framework unit 'results' are recorded only in terms of whether a learner is or is not yet competent, although NZQA 1994:5 suggest "there is also the possibility of awarding merit where applicable" and recent statements from the new CEO of NZQA offer encouragement that this critical area may be open to further debate.

Hotere (1996:9) cites educationalists concerns with the simple competent/not competent approach, suggesting that there is no longer an incentive for "someone to do a superb piece of work when a mediocre piece of work will still get them the unit".

Our discussion with industry contacts suggests that industry has only recently understood this aspect of competency based assessment and that they do not support it. What they support is the integration of theoretical knowledge with the ability to apply it in real world situations to the standard expected by industry. They appear to believe that gradings are valuable indicators of a prospective employee's underlying abilities (eg: Innes:1997).

(c) ***Atomisation***

Students progressing into the workforce are not going to perform a number of separate, discrete tasks. They will be performing 'whole roles' which will require analysis and synthesis of information. The experience with Framework units to date has shown that

cumulative assessments which allow discrete performance criteria to be combined into a coherent whole have worked. In other areas this approach has been criticised by NZQA appointed moderators who have requested evidence of the assessment of individual elements[2].

Mansfield (1989:31) suggests that setting standards that only accredit and test tasks means that learning programmes will be designed to teach the tasks – ignoring the integration required in a work role – and that routine tasks/skills are not a sufficient base for a competent work force. Nicholls (1994:26) suggests that not only should individual elements in subjects be integrated, but a number of core subject areas as well in order "to demonstrate to students their relevance to the world of work".

Gonczi (1993:18) argues that an integrated model would overcome much of this fragmentation and lack of integration. Such an approach would use some combination of the required knowledge, understanding, problem solving, technical skills, attitudes and ethics, thus endeavouring to ensure that the ability "to do" is synthesised with and understanding of "why" – and with the ability to apply the skills and understanding to new and different structures.

(d) ***Resits And Administration***

An additional and related problem from the 'competent'/ 'not yet competent' philosophy is that students, in theory at least, may attempt an assessment task an unlimited number of times until they gain competency. Potential employers have no way of distinguishing between students who achieved competency at their first attempt and those who needed several attempts before being assessed 'competent'.

The need for students to successfully complete each element of a unit before being credited with the unit, in tandem with the 'resit' philosophy means that a number of separate assessment instruments are required for each element (unless the same assessment is readministered each time!!). Teachers involved in this system report large amounts of time being taken in developing and administering a range of assessment tasks and in recording results. Evans (1995:5) provides warnings from the British experience of NVQ's, citing large amounts of paperwork required for recording assessments of "numerous desegregated tasks" and further warns of the accompanying bureaucracy which has been generated. The initial experience with our New Zealand units bears this out in terms of record keeping systems and of developing, co-ordinating and administering resits for individual assessments (eg: Manukau Institute of Technology experience with Travel and Tourism Units).

A further concern is the increasing complexity of units in terms of the precise language in which they are written, including sentence structure, in specifying unit standards, elements and individual performance criteria which drive the subsequent assessment. Critics of the British NVQ's suggest that their units are not user friendly and should be re-written to eliminate "jargon" (eg Merrick:1996).

(e) *Resource Implications*

We have probably all been guilty of underestimating the resources required to successfully implement unit standards based programmes. Kay (1994:25) highlights "the gap between the initial concept and harsh reality", and the heavy learning curve required to implement the British NVQ's. He is critical of the lack of training and development provided for staff, the lack of understanding of how to modify existing courses – and of the lack of adequate time to do so.

Our experience at MIT has been that substantial staff training is required in terms of learning how to write competency based assessments and in writing multiple assessments of equivalent standards (including resists). It has taken a full academic year to allow staff to come to grips with the philosophy, development, delivery and assessment regime required in specific sectors such as Travel and Tourism.

Problematic areas identified have included the degree of precision required in assessments (eg: discussion of factors which may impact on an industry in future must clearly define the number of factors required).

As previously noted the Framework philosophy allows students to retake assessments as many times as they need to demonstrate competency. MIT has overcome the resourcing of this by specifying in their teaching/learning contracts with students that one resit per unit is provided for in their fees – further resits will incur a charge, thus covering the costs of the resources needed to develop and administer these resits.

The Framework philosophy also provides for students to be assessed when they are ready – not the provider! Unless unit standards specify that competency must be demonstrated within specific time frames, assessments should not contain time prescriptions – an interesting implication for tests and examinations with parallel substantial resourcing implications!

Unit standards also contain guidelines which may have substantial resource implications in terms of classroom contact. Each credit represents 10 hours of learning of which approximately 5 hours was expected initially by NZQA to be classroom contact. This could mean, if strictly interpreted, that a 60 credit, semester long programme of 15 teaching weeks requires 20 hours of classroom contact per week (compared to a 3 course per semester load of 12 hours classroom[3]). Thus, if strictly interpreted, a unit based programme of equivalent level to the New Zealand Diploma in Business could require a considerably increased resource base to teach it.

An additional key resourcing issue is the institutional recording system required for unit standards based qualifications; in our experience this is an order of magnitude beyond present results recording requirements.

We are not arguing that the areas identified as concerns above are necessarily wrong, especially those which appear to work in the interests of the student, just that the resourcing implications of implementing them could be substantial. We believe that a greater degree of flexibility between class contact and individual learning is now permitted.

MEETING THE NEEDS OF INDUSTRY

A central tenet of the education reforms which began in the mid 1980's has been the need to make educators more responsive to the needs of industries. Hyland (1996:359) suggests that the British experience is that there is little evidence that NVQ's have remedied their most pressing industrial skill shortages.

It is perhaps timely to review the success or otherwise of unit based programmes in meeting the needs of industry and to learn from the experience to date before expanding the development of Framework based qualifications.

We are not suggesting an outright rejection of competency based activity. We believe that the problems highlighted in this article reflect weaknesses in the competency model used to date.

Griffin (1995:34) calls for a review of competency and a universal interpretation which includes the following requirements:

> that it does not focus solely on the collection of information for undefined purposes; . . . that the competencies are adequately defined; . . . that the complexities of the tasks are represented; . . . [and] that the stakeholders in the process are all adequately informed.

He notes that, despite the argument that the assessment of skills acquired should be informed by suitable research, the upsurge of activity and the commonly agreed importance of competency based training, has generated little literature on the identifiable and measurable outcomes of training activities.

Coolbear (1997:6) suggests that NZQA should recognise that competency-based assessment against particularised performance criteria is only one of a range of valid approaches to assessment. He notes that:

> While entirely appropriate for some vocational and academic skills, there is no evidence that competency-based assessment against particularised performance criteria is the only valid method of assessment. Indeed, there is considerable data to suggest that, unless tasks are closed, it is impossible to define unambiguous standards of competence. Equally, it is recognised that the adoption of any single assessment methodology disadvantages some students within any group.

If existing qualifications meet industry's needs, and industry believe there are no substantial advantages in developing new qualifications, the need for the commitment of substantial resources with no clear return on investment evident must be questioned.

The recently released 'Green paper on the National Qualifications Framework' (Ministry of Education, 1997:7) appears to suggest that the registration of non unit based qualifications would be possible providing:

> the skills and knowledge recognised by the qualification should be clearly stated and endorsed by employers and other interested parties; the assessment leading to the award of the qualifications should be valid; [and] there are opportunities for students to enter into, exit from and transfer between different learning environments and programmes leading to qualifications.

Any qualification, regardless of how it was designed, taught or assessed, could be registered if it met these criteria. The NQF would therefore be able to accommodate all types of qualifications, from school examinations to degrees, whether or not they use unit standards.

Can we, as educators assure ourselves let alone industry, that our current business qualifications are aimed at producing competent graduates who have undergone a holistic education programme? Gonzci (1993:18) suggests that this can be achieved through an integrated approach which can be characterised as:

> problem oriented . . . interdisciplinary . . . embracing professional practice . . . covering groups of competencies . . . focusing on common . . . circumstances . . . demanding and analytical abilities . . . and combining theory and practice

In order to check whether we meet Gonczi's criteria, we would suggest that as business educators we revisit the Course Objectives of the New Zealand Diploma in Business (1996:5) ie:

> To develop graduates who will: demonstrate competence in applying a broad range of generic business skills, principles, and practices in a commercial environment; demonstrate competence in the appreciation of specialist technical knowledge and skills in a specific business field; demonstrate competence in problem solving, critical thinking, communication, and inter-personal skills, and the capability to work independently in self-directed work assignment; demonstrate the application of effective learning strategies and the motivation for further learning and career development in their chosen field.

Can we accept that a broader, more holistic definition of competency is possible than the atomised, behaviourist definition used in early unit development and still evident in many lower level units. What then is the implication for Business Diploma and Degree Programmes?

It is unfortunate that there has been political posturing, by educators, business and policy makers which has been unproductive and time consuming. We are not "seeking redemption without confession or repentance" (Hutton, 1996:156); we are suggesting that it is in the interests of business education to embrace the best that the competency movement has to offer without abandoning other paradigms such as that proposed by Gonczi, (1993), which may be educationally valid for the types of programmes we offer.

NOTES

1. We acknowledge the assistance of Dr Peter Coolbear Academic Policy Officer, APNZ and our colleagues at Manukau Institute of Technology in commenting on an earlier draft of this paper.
2. E.g.: the trials of the New Zealand Diploma in Business paper Marketing Principles No. 141.
3. E.g., the New Zealand Diploma in Business paper Marketing Principles No. 141.

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