The Question of Competency Certainty
Moving from quality to excellence in vocational education
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Abstract

Given that Australian Quality Training Framework (AQTF) 2007 is designed to encourage Registered Training Organisations (RTO'S) to focus on quality and continuous improvement to better meet client needs", a key aspect of AQTF 2007 has been the inclusion of "a continuum that allows for recognition of quality of RTO performance at several points", including quality training and assessment.

While the new AQTF 2007 Excellence Criteria, within the Australian Quality Training Framework, focus on the use of five inter-related categories for excellence, including: learning and assessment, leadership, people focus, client and community focus and management systems, this paper focuses on one criterion, that of learning and assessment. The paper illustrates how the achievement of this criterion relies on the pedagogical expertise of VET educators to ensure the delivery of products is informed by current thinking and research about learning and assessment, so that the essential standards of quality delivery are met. This depends to a large degree on how the required knowledge and skills are integrated in teaching, learning and assessment. Currently, by the advent of "Employability Skills", the integration of skills into teaching, learning and assessment has gained momentum.

Introduction

Under AQTF, 2007, Registered Training Organisations (RTOs) are to meet national standards by focusing on industry requirements, ensuring client's needs are met and continuously improving their system to achieve quality outcomes (Australian Government AQTF, 2007a).

On this basis, AQTF 2007 has provided a national framework for meeting these requirements. The organisations seeking recognition as RTOs must satisfy the "Essential Standards". In addition, RTOs may achieve recognition as a quality committed RTO or an outstanding RTO, by meeting the "Excellence Criteria" of the framework. However, it is voluntary to be assessed under "Excellence Criteria". The "Essential Standard 1" focuses on how the RTO should provide quality training and assessment (Australian Government, 2007b). These requirements suggest that RTOs must move between quality and excellence to continue their operation as an RTO.

Essential "Standard 1" is comprised of 5 elements. Element 1 refers to the point that RTOs collect, analyse and act on relevant data for continuous improvement of quality training and assessment. The current focus on quality, referred to in this paper, dates back to the 1980s despite a literature that dates back to the 1940s. In Australia, "during 1980s, an increasing commitment emerged in the commercial and industrial sector to developing and delivering quality" (Muller and Funnell, 1991:3) that led to the emergence of Total Quality Management (TQM). Given that in vocational education measures of quality can be derived from input, as well as output, the question that needs to be answered is what quality means in the context of vocational

education particularly in relation to learning, assessment and pedagogy. Muller and Funnell (1991) have pointed out that quality in education denotes effectiveness. Further, they elaborate that effectiveness is concerned with outcomes that are in line with the needs and demands of clients, i.e., the learners as well as employers (Muller and Funnell, 1991). This suggests that quality teaching and learning may be synonymous with 'effective teaching and learning'. Thus, for teaching and learning to be effective in the VET sector, one has to more clearly define the concept of "competence", in terms of quality indicators or issues.

Current research (Azemikhah 2005a, 2005b, 2007), albeit in different papers, has argued that competence as the pivotal concept is central in the context of quality teaching, learning and assessment in the VET sector. On this basis, firstly, competence has been clearly defined as a preferred set of assets that results from learning. This is recognised as a quality of the learner in completing vocational education and training.

Clearly in the VET sector, teachers need to facilitate and assess competence as a quality of the learner, while the learners need to develop it. If it is ill-defined as a quality that they are going to facilitate or develop, it is futile to look for strategies, pedagogies and methods to help its facilitation.

The High Level Review (Schofield and McDonald, 2004) has not settled on a clear definition of competence as a learner's quality, rather has attempted to highlight the significant components of competence, in relation to the definition, without clearly defining the term. In other words, competence, as a learner's quality, has not been communicated to teachers for facilitation, the result of which has been pedagogical confusion.

Therefore, in order to address the complexities inherent in pedagogical confusion, the focus of this paper is on that of learning, assessment, and pedagogy proposing how an organisation might achieve high quality learning, assessment and pedagogy that meets or exceeds client, industry and community expectations.

Quality of pedagogical delivery informed by current thinking and research

According to AQTF 2007, to maintain quality learning, assessment and pedagogy in the profession of vocational education, it is required that products be informed by current thinking and research (Australian Government AQTF, 2007a:12). This suggests that quality delivery needs to strike an appropriate balance between the theory and practice of pedagogy in the profession of vocational education. Tyler in an interview pointed out that,

"Every 20 years or so the uneasy tension between theory and practice in professional education (whether it be for doctors teachers or others) alternates between emphasizing the activities within the profession, or emphasizing the theory that may help to guide the profession" (Madaus and Stufflebeam, 1981:245). By examining the VET context, it seems that Tyler has been overlooked because the training reform agenda has been an agenda of practice and theory seems to have been disregarded.

This trend continued in the 2000s. It is the contention of this paper that the turning point or awakening started when the HLR reported a great number of anomalies and confusions in the implementation of the Training Packages. As a result, the need arose for action to find pedagogical solutions for the confusion and handling of anomalies. To date, some VET educators are attempting to address this need, while others remain in a state of confusion.

Azemikhah (2005a, 2005b, 2006, 2007) has referred to a number of these confusions and anomalies in earlier papers. He is supported by the HLR call for a "Re-think" and assertion that "the Training Package model is underpinned by a range of explicit and implicit assumptions about work, work performance, knowledge and skill, teaching, learning and assessment and qualifications. It is some of these assumptions that are in greatest need of a re-think." (Schofield and McDonald, 2004:16).

Kell (2006a:48) also in support of Azemikhah (2005a, 2005b, 2006, 2007) has pointed out that, although Training Packages are meant to be flexible, "some of the national directions concerning training packages and the application of aspects of competency-based training require significant rethinking" (Kell, 2006a:48). The above references suggest that VET in Australia is in a process of renewal, particularly in relation to learning, assessment and pedagogy.

Clearly, VET practitioners in Australia, at present, in terms of knowledge and understanding of the Training Packages, are in the Analytic stage (Rusk 1969). As "in the Socratic discourses three stages of reconstructing knowledge can generally be distinguished", i.e., Opinion Stage, Analytic Stage and Synthetic Stage.

The First stage, labelled by Plato 'Opinion', in which "the individual is unable to give valid reasons for his knowledge or assumed knowledge" as described by Rusk (1969:5). The Opinion Stage suggests that the individual, in the course of forming an opinion, may assume that he has attained knowledge.

This analytic stage, in which the individual is brought to realize that he does not know what he assumed he knew, that leads to contradiction and mental condition of doubts or perplexity;" (Rusk, 1969:5) is characteristic of VET educators understanding of pedagogy in relation to competency (see Schofield and McDonald, 2004). The HLR (Schofield and McDonald, 2004) has established that a state of confusion exists. The High Level Review states, "we find an unacceptably high level of confusion amongst educators, in particular, about the relationship between Training Packages and teaching, learning and assessment. Even after six years, many do not seem to understand how Training Packages work, or how to work with them. This is a key issue that demands attention in order to achieve improvements in the quality of teaching, learning and assessment practice" (Schofield and McDonald, 2004:5), and that VET educators are positioned in a phase of Analytic Development (Rusk, 1969).

Clearly VET educators in Australia are at the Analytic stage. The question is what is needed to move forward. High level Review has answered the question by stating that, "this will require nothing less than determination and goodwill from all parties to proceed along the next stage in a long journey to maximize the potential of the model. A revolution might have been easier" (Schofield and McDonald, 2004:4). Thus HLR

advocates what is referred to in this paper as the 'Rethinking Stage'. This stage reflects the Socratic concept implied in the Synthetic stage – that of rebuilding, and, further, will require an engagement in the theory advocated by Tyler (1949).

Rethinking Stage

This is the stage that advocates as the stage of 'knowledge building'. Knowledge building in VET sector is clearly defined as a requirement by Schofield and McDonald (2004). It refers to the fact that "high-order professional expertise is needed to decide how to develop competence, drawing from a wider pedagogical repertoire and a sophisticated capability to diagnose individual learning needs, and how to make holistic, context-sensitive judgments about whether it has been achieved" (Schofield and McDonald, 2004:28). This will require a paradigm shift (Kuhn, 1970) for VET educators. The paradigm shift required by VET educators will reflect a move away from "practice only" thinking, to incorporate a *conceptual framing* of pedagogy, learning and assessment.

The existing level of "connection between theory and practice" (Tyler, 1949) is a problem that needs to be overcome on the basis that theory gives the rationale for professional practice. At the same time "practice should provide both the proving ground for theory in concrete situations from which theory can be abstracted with meaning"(Tyler, 1949). This juxtapositioning of theory and practice will become the core of the conceptual framing of pedagogy in the VET sector to address the pedagogical confusion.

This implies a nexus between concepts, principles and theories, suggesting that underlying governing variable, which guides practitioners to form the mental map of pedagogical concepts and their relationships, is the theory. "Without theory, practice becomes chaotic, merely a collection of isolated, individual cases. Theory gives meaning and unity to what would otherwise be specific and isolated cases. Hence, these efforts to connect theory to practice more closely are important contributions to professional education " (Tyler, 1949).

As proposed, the VET educators, VET teachers, are called up to engage in this shift in pedagogy. This call is clearly reflected in the HLR. The Review demands are:

- Reconstruction of knowledge and the development of competence based on, 'How the Training Packages work"
- Reconstruction of knowledge and developing competence based on "How to work with Training Packages"
- Development of high-order professional expertise to decide how to develop competence, drawing from a wider pedagogical repertoire and a sophisticated capability to diagnose individual learning needs, and how to make holistic, context-sensitive judgments about whether it has been achieved (Schofield and McDonald, 2004:28).
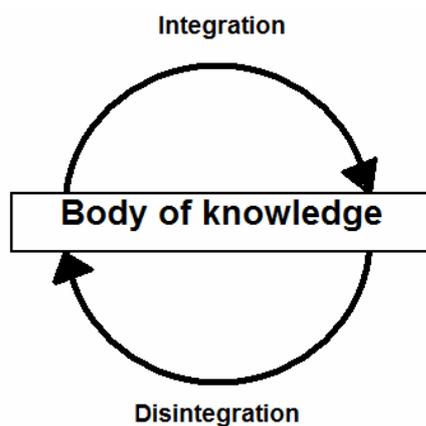
Clearly, these goals have to be achieved if the pedagogical confusions are to be addressed. This paper advocates a new orientation to facilitate this paradigm shift and the renewal of pedagogical engagement in the VET sector. This orientation is entitled "Competencivism".

Competencivism

Given that, according to NCVER (2003), good practice in VET is not tied up to any one learning theory, rather practitioners are able to adapt appropriate learning theories and teaching practices for different purposes, a new orientation for pedagogy is required.

We need a theoretical framework by which VET practitioners can work with the learning theories of their choice in the context of competency based Training Packages as advocated by High Level Review. This paper advocates the theory of Competencivism to meet this need. In Competencivism, the integration, disintegration and reintegration of knowledge yields new knowledge that leads to the enrichment of learner's existing body of knowledge. In Competencivism, new knowledge is not only a construction but also develops from the disintegration of old knowledge or old skills.

Of relevance to the VET sector, the integration occurs between knowledge and performance, using skills as the bridge or integrative agents that generate the confluence of existing knowledge with performance. This process of teaching and learning has been described earlier (Azemikhah, 2005b) in the previous papers by the Double Heuristic Method (DHM).

Integration

Body of knowledge

Disintegration

Both integration of knowledge and disintegration of knowledge yields new knowledge

Fig 1 – Integration/disintegration in Competencivism

The process of integration, disintegration, reintegration and yielding of new knowledge is central to learning, pedagogy and assessment. Competencivism is a learning theory that unites the cognitive and social learning theories. It argues that the process of learning, whether cognitive or social, takes place through integration, disintegration and reintegration of knowledge and performance using skills as integrative agent. Competencivism is based on four premises outlined below.

The first premise is that individuals perform, whether at work or in life, on the basis of a certainty that they possess, a special quality called competence in a specific area of their lives or work. In other words, they are to be both competent and confident or certain in their performance.

The second premise is that this certainty, in possessing the quality of competence, is attained by involvement through a competency-development process, where at the

conclusion of the process, the individual reaches the point of transposition (POT) at which one is certain that one is competent.

The third premise – is that in order for the quality of competence to be developed, and the certainty to be attained, the quality needs to be applied, through an integration process which is a method of bridging knowledge to performance by skills and attributes, and applying it to life or work scenarios, whether real or simulated. During the process of integration, the individual learner may disintegrate the old skills; reintegrate the new skills until the bridging process is complete.

The fourth premise is that after the individual is certain that he is competent, the individual then enters into an agreement with self to engage in a process of refining this quality further towards excellence throughout his/her life. It follows that one refines this quality on a continuous basis, at each point and moment of one's life.

When working within this theory of Competencivism, VET teachers can address two pedagogical dimensions of their work. There is the teaching dimension or pedagogy of teaching that requires the integration of knowledge, skills and performance, and there is the assessment dimension that involves the certainty of whether a learner is competent or not.

In terms of pedagogy of teaching, the Double Heuristic Method (DHM) is used (Azemikhah, 2005b) . It is a method for integration of skills in the context of units of competency of the Training Packages. As mentioned above, Competencivism is a learning theory that facilitates the integration of skills into the teaching, learning and assessment process. With the advent of Employability Skills, and the requirement that these skills also need to be integrated into teaching, learning and assessment (Allen Consulting Group, 2006), the use of DHM and the skills matrix has become more important. According to a recent report by Allen Consulting Group on Employability Skills (Allen Consulting Group, 2006) , teaching, learning and assessment in VET depend on how successfully this integration is achieved. Clearly, DHM as an integration tool is the means to successfully achieve such an outcome. After these skills are mapped into the DHM diagram, a "skills matrix' is constructed to illustrate a tabular representation of the DHM, linking knowledge to performance, using skills as the bridge. An example of such matrix is provided in Figure 2. At present, this matrix is used in Competency Test 1 in the unit FNSACCT407B at Brisbane North Institute of TAFE (BNIT) in Queensland.

FNSACCT407B   **- Set up and Operate a computerised accounting system**

Competency Test 1 Part C- Skills Matrix

Variables	Skills		Performance Criteria
	Employability	**Required Skills**	
	PL4, PL1	RS1, RS2, RS3, RS7	2.1 - Input data is collated, coded and classified before processing
T9 - purchase invoices T10 - purchase orders T19 - purchase and sale of stock	PL4	RS1, RS2, RS3, RS7	2.2 - A wide range of cash and credit transactions are processed in both a service and trading environment
	PS2	RS4, RS3	2.4 - The system outputs is reviewed to verify the accuracy of data input
T22 – Adjustments	PS5	RS6, RS3	2.5 - Adjustments are made for any detected processing errors
SL1 - accounts receivable SL2 - accounts payable SL3 – inventory SL4 - fixed assets	PL1, PL3	RS1, RS2, RS7	3.1 - Any new general ledger accounts, customer, supplier, inventory and fixed asset records are added as required
	PL2, PL3	RS1, RS2, RS7	3.2 - Any existing chart of accounts, customer, supplier, inventory and fixed asset records are maintained and updated
R11 - Other reports R1 - profit and loss	com1	RS1, RS2, RS5	4.1 - Reports to indicate the financial performance and financial position of the organisation are generated
R11 - Other reports R1 - profit and loss	com1, com2	RS4	4.2 - Reports to meet the GST reporting requirements of the organisation are generated
	PL3, PS2	RS7, RS2, RS1	4.3 - Reports to ensure that subsidiary ledgers/accounts reconcile with the general ledger are generated
O7 – security TH1 - on screen help	PL2, TE2	RS2	5.1 - Regular back-ups of the system are made to ensure against loss or corruption of data

Figure 2

Both the Employability Skills and the Required Skills are coded. These codes are then used in the Skills Matrix. The following tables, i.e., Figures 3 and 4, list the codes used in the above skills matrix.

Employability skills used in Competency Test 1:
PL1   establishing and maintaining an accounting system
PL2   maintaining accounting records for compliance purposes
PL3   maintaining systems, records and reporting procedures
PL4   processing accounting data and preparing reports
PS2   checking the accuracy of calculations
PS5   solving discrepancies
com1   compiling data and preparing financial statements and ad hoc reports
com2   developing and writing reports to specifications
TE1   adapting to change in technology and working within ergonomic guidelines
Figure 3

Required skills used in Competency Test 1:
Skills requirements include:
RS1   keyboard skills
RS2   computer literacy
RS3   numeracy for financial calculations and analysis
RS4   proofreading to check details/calculations
RS5   reading, interpreting financial statements and reports
RS6   problem solving skills for providing discrepancy solutions
RS7   recording, gathering and classifying financial information
Figure 4

Competency Certainty

This paper argues that the two parties in competency-based assessment, i.e., the learner and the assessor, must both *agree* on the outcome of the assessment process. It is easier to continue this discussion in the context of recognition of prior learning (RPL) where the roles of both learners and the assessor can be better explained. The RPL process is initiated by the learner when he/she is confident that he/she is competent in a specific unit of competency.

This paper further argues that in competency-based assessment (CBA), both the learner and the assessor must be confident of the outcome of the assessment process. The RPL process is initiated when the learner is confident that he /she is competent in a specific unit of competency. In a research by NCVER (Bowman et al, 2003), one of the learners, called Sally, who has been successful in her RPL application, has pointed out that other students in her class did not apply because of their lack of confidence and fear of failure. According to this research, the data collected from public providers indicated that 34% of learners do not apply for RPL because of the lack of understanding or confidence. The above results suggest that the learner needs to be confident that he/she is competent in order to apply for assessment.

In addition, the AQTF definition of RPL states that "in order to grant RPL the assessor must be confident that the candidate is currently competent against the

endorsed industry or enterprise competency standards or outcomes specified in Australian Qualification Framework courses." (Bowman et al, 2003:17). This suggests that in CBA the assessor also must be confident or certain that the learner is competent.

However, as the CBA is a binary system, sometimes the assessor, or even the learner, may be on the borderline and not sure either way. This view is confirmed by the Assessment Research Centre of the University of Melbourne. In a manual handling training program (Nicholson & Gillis, 2003:7), a rating tool was used to judge between competent (scale 1 and 2), borderline (scale 3) and not yet competent trainees (scale 4 and 5).

Thus, the assessment of competence in the context of Training Packages involves both the learner and the assessor and their agreement on the question of Competency Certainty. In other words, assessment is initiated by the learner, who is confident or certain that he is competent. However, the learner's Competency Certainty must be communicated to the assessor (teacher). In addition, the assessor must go about satisfying himself/herself , by inference from observation or other methods of evidence-gathering, that he/she is also certain or confident that the learner is competent. Sometimes, the assessor is on the borderline and may have difficulty in deciding either way. In such situations, the teacher is neither confident nor certain whether the learner is competent or not, because of the binary nature of competency based assessment (CBA). As a TAFE teacher and assessor, I have occasionally been on the borderline as to whether the learner is competent or not yet competent.
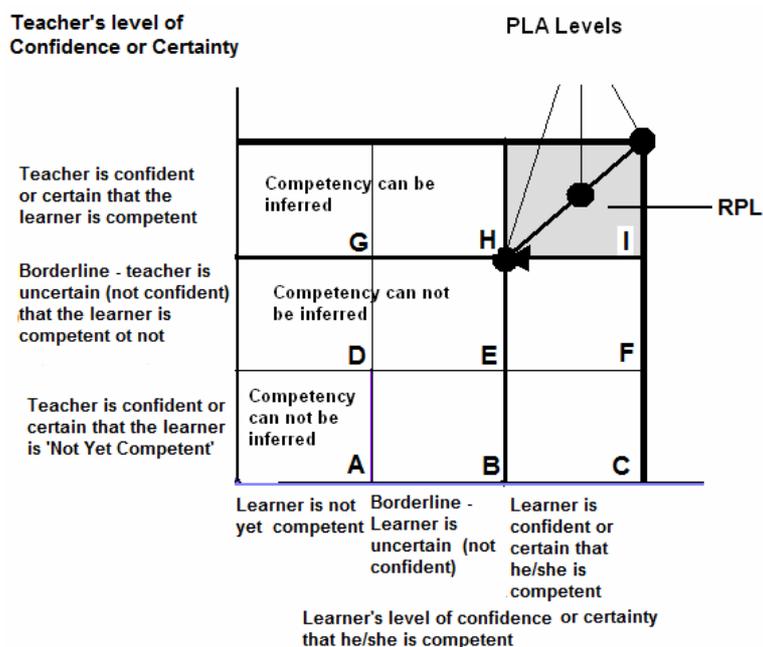

Fig 5 – Competency Certainty diagram

Having considered the above arguments, in the context of Competency Certainty, we arrive at nine areas illustrated in the Figure 5, i.e., areas A to I. Area I, the shaded area, is the area where both the assessor and the learner are confident and certain that the competency has been attained. The shaded area is where the learner is deemed to be competent and the assessor can attest to the learner's competence. The three levels of performance level assessment (PLA), used in Queensland, also fall in this area.

Conclusion

The paper has illustrated how AQTF 2007 has emphasized quality teaching, learning and assessment and how RTOs are required to decide whether to be either a quality-committed or an outstanding RTO in their pursuit. It was argued that, according to Socratic Stages, VET educators are still at the stage of 'Rethinking' or the stage of 'knowledge building' which is clearly defined as a requirement by Schofield and McDonald (2004). The paper then has emphasized that for quality teaching, learning and assessment a proper integration of employability skills and required skills is paramount. The Double Heuristic Method (DHM) is the most important component of Competencivism that can be applied to teaching and the assessment of the Unit of Competency. A sample of Skills Matrix was presented to illustrate the relationship of variables, employability skills, required skills and performance criteria in the context of FNSACCT407B unit of competency. And, finally, the paper provided an illustration of the assessor's certainty in learner's competence. On this basis, the paper has proposed the Competency Certainty Diagram to illustrate how, in the context of quality teaching, learning and assessment, the 'Competency Certainty' can be ascertained.

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