

The nature of innovation in VET professional practice

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Abstract

This paper reports on some issues arising from a national project funded by ANTA and managed by the Victorian Office of Training and Tertiary Education (OTTE). The project provided opportunities for staff and managers to discuss and report on their views about innovation in teaching and learning in VET. It also set out to find examples of innovation across a wide range of VET providers. Additionally, the project built on its consultative processes to develop a specification for the type of national dissemination strategy that respondents felt would most likely support wider knowledge about innovative activity in VET teaching and learning amongst VET practitioners.

Introduction

Effective teaching and learning – matched to the needs of VET learners – are at the heart of the business of VET. Innovation in teaching and learning follows or anticipates this business. For our purposes, ‘innovation’, ‘teacher’, ‘learner’ and ‘business’ are all intended to be interpreted as inclusively as possible across VET’s very wide and expanding remit.

For the purpose of this project our interest was in innovation that produces some demonstrably better results for the learner, the VET staff involved in the innovation, and their employer. We were also concerned to examine whether, as a result of appropriate dissemination, such innovations – which are often local and invisible in the national system – have the potential to offer wider third-party benefits, including making a contribution to the advancement of professional practice in VET.

As we found, there is very considerable innovation underway by individuals and groups or teams of VET practitioners within, or on behalf of, registered training organisations (RTOs). There is a whole developmental process underway across the VET system. However, much of this innovation in VET teaching and learning is, not surprisingly, highly localised and reflects the continually expanding knowledge base of professional practice in the VET system. This raises major issues for wider participation in what is, in

detail, a largely organic process of innovation and learning to change the way that teaching and learning practice is applied in VET and industry workplaces.

Using case studies, the final report for the study – to be completed in late April 2003 – seeks to answer critical questions about the identity and process of innovation in teaching and learning in VET. The findings will encourage greater recognition that many VET practitioners are actively refreshing their practice.

In the paper, the term ‘teaching practice’ is used as the broad descriptor to cover the activities of VET personnel who may describe themselves as teachers or trainers. ‘Teaching practice’ extends beyond the conventional classroom-based instruction model, to include a wide range of activities undertaken by teachers that influence learning, such as preparing resource-based learning materials, delivering and assessing in workplaces and using technology in the delivery of education. For many teachers in contemporary VET, having sole control of a classroom of students is uncommon as teaching often involves working in a team and collaborating with educational managers.

Literature review

A substantial literature review was undertaken for this project and is available at <www.jma.com.au/innovation>. The following discussion focuses on two aspects of the literature review: the definitional issues, as the popular concept of innovation needs grounding, and the drivers of innovation, as the drivers greatly influence the nature of innovation.

There is no universally agreed definition in the literature about what constitutes innovation in teaching. But in business, innovation is distinguished from invention in the following way:

Invention is imagining a good idea or concept and turning this concept into a reality. *Innovation* is turning an invention into a product or service that is successful in the market because it fulfils a need or desire of the market (Ellyard, 2001, p.158).

This definition places the emphasis on the innovation providing value for customers. In this project, the VET learners are the customers; and an emphasis is placed on the innovation providing value for customers. These VET learners or customers can be staff employed in a profit or not-for-profit organization, the self-employed, the unemployed or those individuals not yet in the labour market.

This definition of innovation fits the view of Rossett & Sheldon (2001) of the expanding roles of the training professional (see below) as providing customer value. They see the conventional roles of the training professional as designer, developer, deliverer, demonstrator and coordinator. But the new and future roles of the teacher include those of manager, knowledge systems’ expert, broker and strategist. The new roles are focused on achieving learner and organizational outcomes.

Table 1: Expanding roles of training professionals (Rossett & Sheldon, 2001, p.12)

Conventionally	Now, increasingly, into the future
Developer of individual brainpower	Manager of organisational brainpower
Designer and developer	Developer and purchaser from outsources

Deliverer or coordinator of classes	Less delivery, more focus on organisational readiness and management of knowledge resources
Develops and produces events and products	Creates and nurtures place-bound and online environments that continuously support and develop
Coordinator of short-term events and interactions	Broker of systems that start before classes and continue afterwards
Concern about high-quality experience for participants	Focus on the systems that encourage and support performance, learning, and strategic results
Meeting needs by delivering from inventory	Performance analysis to customise and tailor
Developer of content knowledge	Developer of individual learning power, of the ability to establish associations, find relevant materials, and make meaning
Sharing skills and knowledge	Managing knowledge resources
Demonstrating skills in training analysis, design, development, and delivery	Doing what is needed, working in teams, configuring groups that transcend conventional boundaries, ensuring quality
Focusing on students	Developing programs for supervisors as well as students
Measured by “butts on seats” and “hits” on websites	Measured by contributions to strategic goals and results
Solves problems when they emerge	Anticipates and mitigates

The logic of this model places the emphasis not only on developing innovative products but also on satisfying the customer. Where training is provided for enterprise clients, the training also needs to satisfy the organization. Ellyard’s definition and Rossett & Sheldon’s approach to innovation were generally supported at the focus groups and in the interviews for this project and guided the case study and vignette research discussed below.

We are all facing increasing personal, professional and organizational challenges. For example, Burns (2002, p.22) suggests that we are moving into a world that is complex and unpredictable; network-based and horizontally integrated; information rich; and, uncomfortably, largely beyond our personal control. For work organizations and work-focused societies, one solution is to assist people to capitalize on their learning capabilities in order to learn more rapidly and to apply that learning:

The new economic paradigm requires flexibility, quality, innovation and knowledge at all levels. Success now depends on how quickly and well employees can transform ideas into better products and services. In the new economy, employees capable of rapid learning and willing to undertake retraining in complex tasks/skills are critical. (Burns, 2002, p.22)

Given this new economic paradigm, it is no surprise that the drivers of innovation in teaching and learning in VET are numerous. They are also profound in their cumulative impact and implications. They also interact and make their presence felt in uneven ways. These drivers include:

- The creation of a competitive training market and user choice in VET since the early 1990’s. Recent research (Anderson:NCVER:2003) claims that there is a strong belief

amongst chief executive officers of VET organizations, including TAFE, that innovation in VET has been stimulated by these policies. However, amongst other things the same competitive processes have significantly increased fragmentation in the system, reduced the sharing of ideas and practices and led to a significant decline in co-operation. They are also believed by chief executive officers to have burdened most VET providers with significant and growing compliance and regulatory pressures and costs.

- Rising complexity and uncertainty. The growing recognition that our post-modern society is based on much higher levels of complexity and uncertainty due to such factors as global, national, regional and local social and political diversity and pluralism; competing paradigms or world views; conflicting priorities: fundamental challenges to established authority, values, and power; divergent ways of conceptualising and thinking about business, society and economic and social capital; population trends; and changing markets, finance and investment conditions.
- Changing structures of work. These changes include the growth of part time and casual or contingent workforces and the decline of the standard employment model based on fixed hours, long tenure and prescribe benefits and social contracts about mutuality and ethics. This also includes the endless scarcity and mobility of work and new patterns of devolved/decentralised work organisation.

Other drivers of change include the growing economic and commercial value of knowledge and skills; the aggressive spread of the value proposition that we must be able to demonstrate the value of our contribution and effort to throughputs and outcomes; the national training framework which recognises the multiple ways in which workers can acquire skills and for this recognition to be transferable from one context to another; the spread of digital communications which is increasing the need for information technology literacy and fluency across many workforces; the relentless desire to decrease the time to market for delivering products and services; the rise of the concept of being ‘time poor’; and the need for agility in delivering goods and services that match the particular preferences, wants and needs of different clusters and market segments.

As a result of the above change drivers, much more of what has been taken for granted in the recent past is being contested; and this has important psychological and attitudinal ramifications for people and society, including the people and cultures of the VET workforces. These many drivers of change impact upon innovation in teaching in VET.

Methodology

The major research methods used in this project include the preparation of a literature review and discussion paper, the conducting of focus groups to test the discussion paper, conducting of interviews, collation of a database, development of case studies and other exemplars, and the conducting of focus groups to test the findings. In total, over the life of the project, sixty nine interviews and ten focus groups were conducted, attended by around one hundred and fifty VET participants.

Five case studies and ten vignettes were prepared for the project report on current practice. Case studies and vignettes have different characteristics and provide different

benefits for the project, as follows. Case studies are more structured and detailed, employing a rigorous methodology and providing rich illustration of current practice against a theoretical framework. Vignettes are shorter and less structured, often focusing on one or two major aspects of activity, providing insights into practitioners and learners operating effectively in a variety of settings. The five case studies involved a visit to the site while much of the vignette research was undertaken by telecommunication.

Both the case studies and the vignettes illustrate key themes about innovation in teaching and learning in VET, such as the nature of the innovation, drivers of the innovation, how the innovation was fostered and sustained and student outcomes from innovative teaching.

The selection of case studies and vignettes was made in consultation with the OTTE Project Manager and required the approval of the subjects. Innovation abounds in VET, and it was not difficult to identify a spread of types of innovations. A deliberate attempt was made to identify an example from each State and Territory and from metropolitan, regional and rural settings; to provide instances from both public and private providers; and to provide examples of innovation in both assessment and delivery.

The methodology for the case study research followed the following sequence of activities: design (following Yin, 1994: development of case study selection criteria and research questions); conducting (preparation for data collection; undertaking of site visits; conducting of interviews); analysis of data (using an explanation-building technique of theoretical framework, refinement, revision of proposition); and the development of written summaries.

Each of the five case studies highlight issues that are unique to that setting or group, making each case study different, although all case studies illustrate the scope and nature of the innovation; external drivers for the innovation; internal drivers for the innovation; critical success factors for the innovation; whether the impact of the innovation is measurable; implications for professional development; the model of innovation developed; and the transferability of the model.

Field research involving the development of five case studies and ten smaller studies, called vignettes, was undertaken and the names of the fifteen subjects are set out in the two tables below.

Table 1: The main innovation in each of the five case studies

Organisation	State/ Territory	Innovation
1. Holmesglen Institute of TAFE	VIC	Customised, continually improved, programs for youth at risk
2. Torrens Valley Institute of TAFE	SA	Integrating generic skills in electronics teaching, learning and assessment

3. Goodwill Industries WA in conjunction with West Coast College of TAFE	WA	Innovative training solutions in the metals area for trainees with cerebral palsy
4. Institute of TAFE Tasmania	TAS	Re-inventing the teaching of textiles by using a simulated factory for textile workers. Learner-focused.
5. Open Learning Institute of TAFE	QLD	Managing the convergence of technologies and processes to support distance students

The following table identifies the main innovation in each of the vignettes.

Table 2: The main innovation in each of the ten vignettes

Organisation	State/ Territory	Innovation
1. Caterpillar Institute VIC	WA	Innovative learning in heavy vehicles training
2. Brisbane and North Point Institute of TAFE	QLD	Simulated training assessment environment in engineering for trainees and apprentices
3. Centrelink Call Centre, Coffs Harbour and North Coast Institute	NSW/A CT	Collaborative provision of call centre, telecommunications training in a regional centre
4. East Gippsland Institute of TAFE	VIC	Use of workplace-based mentors for training delivery of Community Services program across Gippsland region
5. Manufacturing Learning Centres, Mitsubishi Motors Australia	SA	Delivery of VET in Schools in industry
6. TNT, TDT Australia and six providers	National	Developing good practice methods using a national community of practice
7. Open Training and Education Network (OTEN)	NSW	Extensive integrated electronic support for distance students
8. Photography Studies College	VIC	Innovative teaching, modelling client-responsiveness and industry knowledge
9. Nabalco/DEET – East Arham Land, NT	NT	Innovative delivery of VET unemployed Indigenous students in remote Arnhem Land
10. Hunter Institute, NSW	NSW	Multiple innovations from a whole of organisation approach

Two of the case studies and one of the vignettes are discussed below. Although they each involve traditional trade-related teaching, they were selected for this paper because they involve very different student groups, contexts, drivers and outcomes, reinforcing the point that the nature of innovation in teaching in VET is varied.

Findings

Following is a discussion of major findings from the case study involving Holmesglen Institute, the vignette involving Caterpillar Institute (WA) and the case study involving Goodwill Industries and West Coast College.

The VET system faces the ongoing challenge of providing a range of pathways from secondary school into VET to suit different types of students. In 1982 Holmesglen Institute of TAFE in suburban Melbourne commenced offering what was to become a successful introductory trade course for 15-18 year old students from local secondary schools. This Trade Technical Orientation Program (TTOP) was innovative in the 1980s. It provided a pathway into VET and then into jobs for students who did not fit in with routine secondary schools. Holmesglen has continually improved the program since. As a result, in 2003 the program remains innovative and staff continue to improve the model to suit each new intake of students and changes in the job market. The case study shows that it is possible for a long-established VET program to still demonstrate innovation in teaching and learning.

The Trade Technical Orientation Program (TTOP) is designed to provide orientation studies in a range of different trade and technical areas, including building studies, bricklaying, plumbing and sheet-metal, metal fabrication and welding, electricity/electronics, furniture manufacturing, horticulture, glass and glazing, painting and decorating and fitness and recreation. Students also undertake academic studies in mathematics, science and English. The course is particularly relevant for students considering an apprenticeship. Students spend four days a week at Holmesglen and one day in a placement, learning on-the-job. A normal week for a student is as follows: Monday and Thursday, studying two different trades; Tuesday-Wednesday, academic work; Friday, job placement.

Modifications and improvements of the program are the result of three different forces: feedback from students, feedback from industry and ideas from staff. For instance, on Mondays, all the TTOP students regularly gather together with the staff to discuss the students' views and concerns. Changes to the program can follow these exchanges. Also, representatives from industry are often invited to address the groups. Trevor Perry, the manager of the Plumbing and Construction Finishing department at Holmesglen, who oversees the program, describes how innovation is part of the normal way the program is managed:

We make changes to the program each year. For instance, if a trade is not satisfying the kids, we change it. But we always try to make sure there are job opportunities at the end of the program. In 2000 we made changes to the academic content of our program: the course wasn't defined well enough, in terms of the students, so we altered the curriculum to suit the students. For example, we changed the science curriculum in order to fit with trades the students were learning about.

In 2002 the staff spent time planning for the integration of TTOP with the new qualification, the Victorian Certificate of Applied Learning (VCAL). Despite the name change to TTOP/VCAL the underlying approach from Holmesglen staff will continue to be responsive to changing student and industry needs. Trevor Perry believes that, for students, the close linking of skill development within TTOP with national competencies will add further value to the program.

The Caterpillar Institute (WA) vignette shows that there can be many dimensions to innovation in teaching. Multiple learner-support initiatives are identified in this vignette, involving mechanics from the light vehicles field acquiring qualifications in the heavy

vehicle field, to meet a significant industry skill shortage. The innovations relate to learner support arrangements that allow for the recognition of current competencies, using a variety of assessment and delivery strategies, and providing individual support, including changing the time-frame for the program to suit participants and their companies. This integrated, multi-dimensional service-based approach to innovation in teaching, in response to industry needs, has resulted in offers of employment for all participants in the three inaugural programs conducted in 2002-2003.

The Caterpillar Institute (WA) Pty Ltd has operated as a Registered Training Organisation since early 2001. It is a joint venture between Caterpillar, a global leader in heavy vehicles and Westrac Equipment Pty Ltd, a leading Western Australian retailer of heavy vehicles. The Institute offers training and assessment services in the following areas: Certificate II Automotive (Mechanical Vehicle Servicing); Certificate III in Automotive (Mechanical- Heavy Vehicle Mobile Equipment; Plant/Earth Moving /Agriculture; Post Trade Technical Training; Machine Operator Training; Occupational Safety and Health; Assessment and Work Place Training; and Front Line Management.

In response to a critical skill shortage for heavy vehicle mechanics, the Caterpillar Institute designed an innovative Trade Upgrade program that allows trades people in the Light Vehicle Industry to upgrade their skills so they can work within the Heavy Vehicle Industry. The Trade Upgrade program enables trades people with a Certificate III in Light Vehicle Mechanics Trade to upgrade their skills and knowledge to the Certificate III in Heavy Vehicle Mobile Equipment, within the Automotive Training Package.

During 2002 the Caterpillar Institute advertised the new Trade Update program and received 150 enquiries, resulting in 35 interviews and the selection of 8 mechanics in the first intake. As a result of the program, all participants gained employment in the heavy-duty mechanical industry. Caterpillar Institute (WA) presently has a waiting list of people wanting to undertake the program and is now conducting the program in two locations: Perth and Kalgoorlie. The participants in the Kalgoorlie group were employed by WesTrac on the basis that they would complete the trade upgrade. The employer is releasing them on full pay to attend the block release training.

One key message from this vignette is that VET teachers need skills in at least four domains:

- vocational skills such a knowledge of heavy vehicle mechanics;
- adult learning/teaching skills such as a knowledge of how to support resource-based learning;
- VET-sector specific skills, such as how to assess competencies using a variety of strategies;
- personal skills, such as how to assist students develop self-confidence to function a partially self-managed learning environment.

Another message from this vignette is that new roles for teachers, following Rossett & Sheldon (2002), include, firstly, contributing to the many support systems created by the

training company that encourage and support the individual's learning; and, secondly, managing knowledge resources developed by others.

Goodwill Industries, the subject of a case study, is a light manufacturing engineering business owned by the Cerebral Palsy Association of Western Australia Limited. It is an employment service providing a 'supported employment opportunity' for fifty-six people with a range of disabilities. Funding for employees is provided through the Commonwealth Government Department of Family and Community Services.

Goodwill is about twenty kilometres from Perth. It makes housing and construction hardware such as brick ties, building straps, brackets and washers. It also produces light engineering products such as ladders, chairs, scaffold equipment and gas manifolds, and cabins for four-wheel drive vehicles. Jobs performed at Goodwill include machine operating, product assembly, packaging and stores work.

One of Goodwill's specific aims is to provide training and support to assist employees to develop vocational and education skills. An innovative approach to the development of competencies within the Metals and Engineering Training Package was initiated in 2001. Besides the teaching of core skills, the innovation in teaching and assessment at Goodwill included the introduction in 2001 of competency-based, workplace training for its supported employees, as part of the implementation of the Metals and Engineering Training Package.

According to Christine Evans from West Coast College, the innovation has moved through two stages since 2001. Firstly, the introduction of the Training Package involved considerable analysis of the units and elements of competence to identify the competencies and elements that are relevant to the Goodwill employees. Phil Pitchers, Manager of Goodwill, explains:

Our supported employees may never gain a Certificate I or II, which is not necessarily the goal for most. We want them to acquire competencies and we want to be able to assess them against national standards.

The second stage of the innovation, in 2002, involved the development of flexible assessment tools, which provided many challenges.

The innovation in providing competency-based, workplace training as part of the implementation of a Training Package is being progressively improved, particularly in the area of assessment. For instance, there is a new focus on pre-training assessment that includes the assessment of each employee by a speech pathologist, occupational therapist and physiotherapist. Phil Pitchers explains the importance of such specialist input:

The assessment conducted by these specialists leads to the design of training customised for the individual. For instance, at this early stage, the speech pathologist can tell you many things: for example, cognitive skills, retention ability and the ability to communicate.

Another improvement involves the new ways training is customised to suit the student. Ned Cocivera, Goodwill's training manager, explains:

We are tailoring better the way we present training. Initially we grouped students according to their disabilities. The next step is to group students according to whether they have speech, hearing or

retention deficiencies. We use a range of methodologies, particularly role playing and visuals, such as PowerPoint.

The model of competency-based, workplace training for employees with cerebral palsy and other disabilities will be sustained at Goodwill Industries because of the staff and employee commitment to a transparent training and assessment process which benefits all parties.

Discussion

The particular and local instances of practitioner innovation found in the research for this project serve as a reminder of the many different ways in which VET practitioners are innovative. Identifying good practice is a key to fostering innovation as it profiles champions and also encourages the creation of collaborative mechanisms to further explore good practice.

The contexts for teaching and learning in VET are changing continuously, encouraging the development of innovative methods. The enterprise training demands on VET are as diverse as there are enterprises and the roles for VET teachers in providing workplace training are manifold. There is limitless scope for innovation in teaching and learning in VET.

Pressures for change are flowing with increasing force into teaching and learning practice within VET. Historically, VET has been the most sensitive sector of education to shifts in community and industry needs. Indeed, its identity has been built by the flexibility of its educational content and provision. As a consequence of this ongoing change, wider, deeper and more frequent innovation is now needed in VET teaching and learning practices.

The pace and quality of transformational change in the educational performance of the national VET system is a major policy matter. Innovation in teaching practice - in response to the learner-centred agenda contained within national training reform – is of great significance. VET practitioners need to change their practice, increase their knowledge base and skills and adapt VET pedagogy in order to maintain the critical bridging role that teachers and trainers must play between learner aspirations and learner achievements.

The appropriate growth and development of a skilled teacher/trainer workforce underpins VET's future and must be addressed by the leadership and management of VET organisations. Positive responses to change also define the future standing and status of professional practice in the sector.

In summary, our project has concluded that there are good grounds for optimism about innovation in teaching and learning practices in VET.

The VET sector needs highly informed practitioners who know about successful practice elsewhere in the sector and can match this with appropriate innovations of their own.

Whilst the narrative we have provided emphasises that the conditions and drivers behind specific innovation are highly contextual, the interpretation of possibilities and solutions rely heavily on the professional judgment of the VET practitioners involved.

It is this migrating frontier of professional practice that suggests that there are significant third-party benefits to be gained from VET practitioners having better sources of information, knowledge and understanding of innovative teaching and learning practice across the sector.

Making practitioner information more readily available can support the VET professional to position their own thinking and practice closer to contemporary changes in VET professional practice. This can help to ensure that innovation, in whatever form it then takes, will continue to contribute positively to the development of teaching and learning outcomes across the sector.

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