This paper was developed as part of a presentation to the NSW TAFE Commission Directors ‘STRATEGIC DIRECTIONS WORKSHOP’ held on 8th November 2002, Sydney, Australia. The paper and workshop were developed and written by Gary Willmott (Assistant Director General TAFE NSW) and Cathy Barry (Senior Policy & Research Officer)

How does learning best occur in VET?
What is some of the emerging thinking about VET pedagogy?

INTRODUCTION

A review of current relevant literature reveals a loose but large collection of theories, research findings, and opinion pieces that can be drawn on to contribute to the development of a pedagogy of vocational education and training (VET). Contributions come from the literature on psychological theory and research particularly cognitive and behavioural psychology, competency-based training, workplace learning, adult learning principles and school pedagogy. There are also valuable findings in the literature, which presents action research and evaluations of VET teaching and learning practice, for example, the recent TAFE NSW project on women and online learning in VET. Some VET research such as the TAFE NSW review of manufacturing and engineering provision, targets specific skill areas. Dedicated VET research bodies like the National Centre for Vocational Education Research, research particular areas of teaching and learning, such as the work since 1999 on the learning needs and styles of older learners. Major recent policy developments in VET such the policy for people with disabilities are underpinned by some evidence of the learning needs and styles of specific groups of adult learners.

However, there currently does not appear to be a cohesive body of theory and research which is recognised as the pedagogy of VET which TAFE NSW teachers can easily access to make confident, comprehensive decisions about their teaching practice. A cohesive body of theory and research and a related pedagogy would be valuable for future VET planning. There appears to be a limited amount of empirical research, which has been conducted for the specific purpose of developing VET pedagogy or seeking answers to the questions on how learning best occurs in VET, or what constitutes effective teaching in VET. Much of the empirical research is conducted by or through the higher education sector.

HISTORY OF VET AND VET PEDAGOGY

One avenue of inquiry in looking for a theory of VET learning, or VET pedagogy, is to look at the historical origins of vocational education and to investigate whether VET learning has manifest any special qualities of learning activity.

To do this one needs to go to the origins of the apprenticeship system and, what a long and rich history we have to draw upon. The first English apprenticeship referred to in writing in that of St William of Norwich, to a Skinner in the 12th century. "By 1271, one of Europe's oldest set of 'craft gild' regulations, that of the London cord wainers shows apprenticeship well developed... the earliest surviving apprentice's indenture is from 1291, to a Norwich spicer." (Clapham, p. 133)

Clapham goes on to trace the development of the trade apprenticeships and their relationship to employment, to master craftsmen and with the concept of exclusive training. He notes "as trades slowly acquired full gild organisation, apprenticeship was regulated by ordinance and its duration was often fixed ... London settled down to a
normal seven years apprenticeship ... but there were variations, Coventry only decreed seven years for all in 1494."

Although ex-apprentices eventually became known as "journeymen" (the road to mastery, becoming a "master craftsman" was a long one), this was not originally so. Early journeymen, or "day men", penny-a-day workers were not part of the master's household as were apprentices. In 1408, the rules of the London Blacksmiths, in one of the earliest references to training, contain the clause "no one of the said trade shall teach his journeyman secrets as he would his apprentice." (p. 133)

The first act of Parliament to regulate apprenticeships was enacted by Queen Elizabeth I, with the Statute of Artifers of 1562-3. This Act "forbad any person to set up, occupy, use of exercise any craft, mistery or occupation now used or occupied within the realm unless he had him brought up therein 7 years at the least as an apprentice." (Heaton, p.355). This statute remained in force for over 250 years. Industries in which skill or knowledge came from long training continued to insist on apprenticeship. "Any youth who wished to enter wholesale, foreign or even some retail trades would be formally indentured and trained in the office, shop, warehouse and (through) "fieldwork" going with his master round the markets and visiting London or foreign parts". (p. 355)

It should be stressed that the goal of apprenticeship was to eventually become a master craftsman or artisan. Heaton makes the comment that a book on vocational guidance published in 1747 urged parents not to indenture their children unless they had enough money for setting them up as masters later on!

Of course, for most of the history of apprenticeship training, though an integral part of the system (and the exclusion of such training to those who were not apprenticed) was, in our terms, fully on-the-job. The apprentice learned by watching the master, absorbing advice, doing menial and later more skilled work. The apprentice also developed into the culture, ethos, and ethics of trade, until the 19th century, by indeed living with the master as a virtual member of the family. Apprenticeships were also common in the church with an early expression of vocation learning to train as a priest or cleric.

Off-the-job training and the reduction of the term of apprenticeship came much later. In TAFE, daytime trades-oriented courses were introduced in 1902 and ended in 1913. Day release for apprentices was introduced in NSW in 1943, much later than in other states. South Australia introduced it in 1919, Queensland in 1924, WA in 1925 and Victoria in 1932.

With the introduction of the off-the-job training, the period of indenture also reduced. In 1952, Mr Justice Wright conducted the first national inquiry into apprenticeships. This led to apprenticeships being reduced to four years. Off-the-job training became universal in Australia, and fully on-the-job apprenticeships disappeared (Robinson, C. Campus Review, November 21-27 2001).

How does all this inform a theory or pedagogy of VET?
From this short historical analysis there appears to be a number of underlying traits or principles associated with vocational training in the early apprenticeship system. These were not of course consciously identified by the early master craftsmen, nor indeed by the forerunners of the modern TAFE system, but they appear to be as germane then as they are today, at least as underpinning elements of the putative theory of vocational learning.

In summary, they are that:

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Vocational learning is strongly focussed on learning through observation, practice in the workplace, learning by emulation and thorough guidance and mentoring.

The learning is heavily skills focussed, aspiring to high "craftsmanship" or expertise, with this also comes immersion in the culture and ethos of the vocation.

Vocational learning has a strong orientation to implicit knowledge. Often practitioners have little overt theory or a high capacity to explain what they know, but they do have a high level of knowledge. This is one quality, which appears to differentiate learning in higher education, which places strong emphasis on explication and reproduction of knowledge (but perhaps less on practice).

Historically vocational learning is highly time dependent - it does not happen quickly - learning is heavily centred on osmosis (absorption) and the learner accepting much of the responsibility for learning.

Vocational learning is closely linked with maturation to full adulthood. Historically the apprenticeship was a rite of passage to adulthood. While lifelong learning has broadened the scope of vet, "entry level training" and post-school vocational learning embodies many of the generic skills closely linked with maturing to adulthood and building upon a maturing concept of self.

Vocational learning is about training for performance of tasks to known and agreed standards in known and defined conditions (the master craftsperson's concept of "craftsmanship", the modern ANTA concept of "competency standards"). The literature of "professional" learning stresses knowing the theory to inform responses in unpredictable conditions.

The growth of off-the-job delivery in vet in the past 50 years has in many respects been a process of reproducing the application of these principles in structured contexts to allow faster skills acquisition through "workshop" environments, more interventionist strategies (teaching and questioning) by a different mentor (the teacher).

The ways in which modern vocational teaching and learning replicates more efficiently and effectively these elements of work based learning is at the heart of VET pedagogy.

COMMON THEMES ON TEACHING AND LEARNING

There are some common or strong features emerging in the current literature on desired features of teaching and learning in VET. If these features are to be incorporated and funded in VET practice then the effectiveness of the features need to be tested empirically over time.

The commonly and strongly desired features of TAFE teaching and learning can be considered in two main categories:

- knowledge and skills or competencies that are critical for a modern and future VET and workplace
- teaching and learning skills that facilitate acquisition of these critical skills.

The Competencies
The teaching and learning strategies that are emphasised in recent literature are focussed on enabling the learner to develop long term capability to solve real
workplace and vocational learning problems in a variety of contexts and to communicate, share and work well with other workers and learners to solve these problems. Learners will be expected increasingly to direct and manage their learning and assessment activity and performance assessment and to critically reflect on their workplace and vocational performance. There is a major focus on exploring the learning needs and styles of ageing learners in VET to reflect likely changes in the VET learner demographic. The nature of the competencies, skills and knowledge to be delivered is relevant here in that those emphasised as critical will have a significant impact on the selection of teaching and learning strategies. Consistently, through recent literature, references can be found about the value of skills such as:

- problem solving in real work situations
- sustainable vocational learning strategies
- making judgements about required workplace standards and performance
- implicit workplace knowledge and skills
- higher order thinking about workplace and vocational performance
- workplace communication and teamwork.

Recent research by ANTA and industry has identified a very large number of generic skills at all levels of VET qualifications as being important to industry. The skills include: interpersonal skills, numeracy skills and media savvy.

Other competencies that have been recently documented as critical include:

- enterprise
- calmness/wellbeing
- stamina
- self-insight
- capacity to manage one’s own career and life
- handling paradoxical and contradictory demands in the modern workplace. In the 2002 ANTA Blue Skies booklet, Whyte argues that in the real workplace people need to be: competitive and cooperative; me-first and you-first; short-term winners and long-term strategists; voracious consumers and gentle community builders; valued workers and poorly paid; and, keen to work and disinterested in jobs ((p. 40-41).

The Teaching and Learning Strategies
The literature indicates that teachers will need to provide learners with real workplace problems and a choice in the resources and learning activities they use to solve the problems. Teachers will be expected to ensure that learners have substantial opportunities to question and reflect on the workplace and vocational knowledge and skills they are acquiring. Teachers will need to be increasingly expert in understanding the particular needs of adult learners and in referring learners with emotional needs to experts. The needs and learning styles of individual adult learners and particular groups will need to be well researched, identified and met through customised learning strategies.

Many of the competencies, and teaching and learning strategies in the current literature are not new but their importance is more emphasised and the call for their prominence in VET curriculum and delivery is stronger and more frequent. The strategies include:

- increased adult learner responsibility for learning
- increased workplace learning opportunities
- more choice of learning activities for adult learners
- extensive use of workplace problem-based learning
- incisive questioning techniques about workplace performance

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more group work and sharing and more value placed on group assessment 
> teachers knowing their adult learners better – re emotions, learning needs and styles 
> teachers modelling helpful adult learning behaviours 
> more learning activity that is meaningful to the background of the student 
> more feedback on performance – especially ‘reciprocal feedback’ between teacher and learner and especially on performance in a real workplace 
> more expert referral of students by teachers for emotional problems 
> greater trust of students by teachers.

These competencies and strategies are repeatedly referred to across a wide range of recent literature. For example Doolittle and Camp’s quite technical 1999 paper, Constructivism: The Career and Technical Education Perspective, supports cognitive constructivism as a pedagogy for VET and address the following seven essential factors in a constructivist pedagogy: learning should take place in authentic and real-world environments; learning should involve social negotiation and mediation; content and skills should be made relevant to the learner; content and skills should be understood within the frame work of the learner’s prior knowledge; students should be assessed formatively to inform future learning experiences; and, students should be encouraged to become self-regulatory, self-mediated and self-aware.

In the ANTA Blue Skies work, Rennie and Wyn list well-known adult learning principles including: the prior learning of the student is appreciated; the subject matter is relevant to their immediate needs; the learning environment encourages dialogue and interaction; mistakes are seen as valuable opportunities to learn; and, the subject matter is presented using arrange of approaches (p. 10).

Prominent in the literature in terms of shifts in the emphasis in VET pedagogy are arguments for:

> a major push in the direction of not just negotiated and self-directed learning and assessment programs but also self-determined learning and assessment for the adult learner – a move from pedagogy and even andragogy to heutagogy 
> the introduction of improved strategies for developing and higher order thinking skills to facilitate transfer and use of workplace knowledge and skill to a wider number of workplace contexts and 
> development of strategies to enhance implicit knowledge and skill and high level workplace expertise 
> development of strategies that facilitate in the workplace learning.

**Self-Determined Learning and Assessment/Heutagogy**

Boote (2002) presents a well-researched argument for self-directed learning in VET with a variety of evidence, for example, When given a choice, students prefer greater responsibility for the planning and directing involved in the learning activity (Bulmer & Moss 1997; Knox 1996) (p. 2)

In developing a pedagogy for VET, TAFE NSW needs to reconcile the prescriptive requirements of the Training Packages, the AQTF and state regulatory requirements such as licensing and trade recognition, with any significant moves towards more self-directed learning and assessment. Wills, Hedberg and Oliver in the ANTA Blue Skies booklet seem comfortable with Training Packages and a more self-directed learning environment. Their view is that as long as students have choice in resources the

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learning will be robust in a VET system with prescribed outcomes. P37 The requirements of any information and administrative system of a large and complex provider will need to be reviewed in moving towards more self-directed learning.

Boote argues that some skills are important because they underpin self-directed learning capacity. Executive skills such as goal setting, decision-making, organisation, management, problem solving and evaluation are needed in self-directed learning. (p. 3)

Boote argues that it is possible to, 'influence the progression of self-directedness through educational intervention...' (p. 4)

Hase (2001) in Kenyon and Hase and Davis and Hase (2002) draws on two pieces of action research in which he was involved to argue for self-determined learning and assessment: Frontline Management Initiative through Kangaroo Point TAFE; and, the Public Sector Executive Management Program Southern Cross University.

In both pieces of research it is argued that pedagogy and andragogy are passé because determination of the learning and assessment in VET should be in the hands of the learner rather than the teacher.

While andragogy (Knowles 1970) provided many useful approaches for improving educational methodology, and indeed has been accepted almost universally, it still has connotations of a teacher-learner relationship. It may be argued that the rapid rate of change in society, and the so-called information explosion, suggest that we should now be looking at an educational approach where it is the learner him/herself who determines what and how learning should take place. Heutagogy, the study of self-determined learning, may be viewed as a natural progression from earlier educational methodologies – in particular from capability development – and may well provide the optimal approach to learning in the twenty-first century. (Kenyon and Hase p. 1)

In the ANTA Blue Skies piece Assessment; Have We Forgotten Something Boud (2002) strongly contends that assessment should be in the hands of the learners even to the point of the learner determining the assessment criteria. Boud argues that the ability to determine performance standards is critical to acquire for the workplace and for sustainable and lifelong learning. Boud goes further and proposes that such skills be developed in VET learners.

When they leave the confines of the training room, or even the on-the job training task, most people are ill-equipped to recognise cues which might indicate what is good quality work, or what distinguishes good from not so good task performance, or to work out for themselves whether they need to improve, learn more, ask for help or suggest an innovative change to what they are currently doing. Yet, it is attention to these matters that makes people effective in what they do. (p. 42)

At issue for TAFE NSW is what role it intends to play in supporting students to acquire the skills that underpin self-directed or even self-determined learning and how the delivery of these skills will be balanced with delivery of more technical and job-specific skills. The proportion of the curriculum or delivery time that will be allocated to competencies in, for example, goal-setting, evaluation and learning to learn needs to be considered as does the curriculum design which could best deliver these skills. TAFE NSW will need to continue to gather evidence about the educational effectiveness and efficiency of self-directed and self-determined learning over time for particular groups of learners and competencies.
It is important with any trend in education to consider the readiness and styles of all learners. It is clear that students will be on a continuum of acquisition of the skills needed to underpin self-directed and self-determined learning. Boote raises ethical concerns such as not setting the student up for failure, and cautions that self-directed learning will not suit all students all the time. (p. 3)

In putting forward their position Kenyon and Hase look to the future,

There is an assumption in all of this that while competence in a particular area is essential there is a need to move beyond knowledge and skills that really measure the past, towards capability that is preparation for the future (p. 5).

Explicit Knowledge/ Metacognition/Higher Order Thinking Skills/
Explicit knowledge is usually conscious where the learner knows that they have acquired skills and knowledge. Metacognition, or higher order thinking usually associated with conscious thought and explicit knowledge. Dienes and Perner (2000) argue that for learning transfer to take place to new contexts learning must be explicit. Explicit learning occurs with metacognition – that is when the learner knows that they know something. (p. 10 to 11)

There is currently a strong emphasis on the value of developing higher order thinking skills in VET. It is argued this can be achieved through providing opportunities for reflection and questioning about aspects of learning. In the ANTA Blue Skies work, Wills, Hedberg and Oliver argue that competency-based training and problem-based learning are ‘not incompatible.’ They describe putting the learner in a real work situation and ‘... asking what they would do in such and such a contingency. Why did you make that response? Was it your intuitive understanding of the situation? Your skill? Your perception of the norms and values of the workplace?’ (p. 37)

Boote emphasises the value of metacognitive skills.

Murray-Harvey (1993, p. 79) found that "metacognitive capability stands out as the characteristic that most clearly identifies successful students". She summarised successful students as having:
• an understanding of how to use learning strengths
• an internal locus of control of behaviour
• strong self-image including self-motivation, self-efficacy and self-direction
• metacognition skills
• appropriate approaches to learning
• mature age. (p. 3)

Boote also links the capacity for self-direction in learning with the presence of metacognitive skills in the learner.

To be self-directed or self-managing to any degree, students need to be able, or be encouraged, to choose strategies, reflect on the appropriateness of the strategy selected, choose again if necessary, and review achievement of their learning goal — that is, they need metacognitive (or learning to learn skills Boote 1991a, b c) P3

In presenting some sound empirical evidence that experiential learning is an effective learning approach for adult learners in an education course, Mok (1999) finds that reflection is a vital learning strategy within the approach. Mok argues that learners need more than just experiencing authentic situations to enhance the experiential learning. Reflection, Mok finds, builds concepts, judgement criteria, transformation and innovation. (p. 59)

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The literature consistently supports the need for increased use of high quality incisive questioning of the learners about what they have learnt, how and why. It is also important that the learner develops the skills of questioning and reflection to enable them to perform independently in a variety of workplace contexts and problems and throughout a lifetime of change and vocational learning.

**Implicit Knowledge**

'Tacit (silent) knowledge (Polanyi, 1958) and implicit learning (Berry) have in common the idea of not knowing what you do know or have learned.' Atherton p1. Other definitions of implicit knowledge include: knowledge which we routinely use or take for granted; knowledge which cannot be articulated and cannot therefore be taught but can be learned or acquired; all that one can do to teach is to provide opportunities for people to learn or examples; most effectively picked up in real world situation; about the process of learning rather than the content and, unconsciously learning a rule. Atherton p1

The literature indicates that both explicit and implicit knowledge are important depending on the context. A prototypical type of explicit learning is hypothesis testing. To test and confirm a hypothesis is to realise why it is knowledge. Implicit knowledge is often found in knowledge of processes that contribute to expert work. The expert is unaware of their knowledge of these processes.

Implicit knowledge is usually unconscious knowledge of processes that underpin performance. Lack of metacognition is associated with implicit learning. People can draw inferences about what they know from implicit knowledge but they do not know they know it. Where metacognition is not present but learning has occurred the learning is likely to have been implicit.

Atherton contends that in implicit learning – although metacognition may not be present or strong, rules may have been implicitly learned or feelings may be strong enough to make confident judgements. Atherton P16

Strong implicit knowledge and skill are generally associated with the processes, which underpin expert performance in a particular context and are very important in expert performance.

In the ANTA Blue Skies work Kirsner proposes some teaching and learning strategies, which will facilitate the development of implicit knowledge in VET:

- more opportunities for practice
- better feedback on performance
- ensuring the training environment mirrors the workplace environment. (p. 23)

**Workplace Learning**

Throughout the recent literature strong and frequent emphasis is placed on the value of opportunities to learn and be assessed in the workplace. There is call to develop more sophisticated understandings of how learning occurs in the workplace so that teaching and learning strategies can be based on improved understandings. A number of recent papers have clearly attempted to develop a pedagogy for workplace learning.

Billet (2002) in laying the foundations for a pedagogy of workplace learning refutes the view that workplace learning provides only informal or unstructured learning. He argues workplace learning conforms to the structures and norms required in the workplace and therefore has a very strong structure. Billet puts up strongly researched argument for a unique workplace pedagogy and for the need for further research and development in
this area. He contends it is very important to understand the uniqueness of workplace pedagogy to understand VET learning overall.

Guile (2002) proposes a new way of conceptualising generic skills for the workplace that he believes will assist the development of skills needed for the new knowledge economy. He distinguishes between generic skills which are the property of the individual and will be particularly useful in routine, specific and immediate problems and those which are contextual, socio-cultural and participative and more useful for solving the novel, complex and futuristic workplace problems that are needed for the new knowledge economy.

Both Billet and Guile both address the significant differences in workplace learning opportunities that learners experience as a result of the differences in a wide range of features of workplaces. Guile introduces 'consequential transition' as a concept which describes the differences in workplace learning opportunities brought about by the different purposes of activities within a workplace. Billet argues that opportunities to be afforded and to access learning in the workplace are governed by very different workplace norms, values, procedures and goals and by the individuals ontogeny, that is, their evolving personal history. The differences and their consequences must be understood and teaching and learning activities designed to ensure learners can gain access to the full suite of workplace opportunities they need for learning.

The Development of Pedagogy of VET

Does VET have a pedagogy that is unique? What are the similarities and differences between university, school and VET pedagogy?

The existence of a unique pedagogy for VET may be based on answering the question **What is VET?**

- VET is characterised by being focussed on industry needs, workplace relevant learning and applied learning. Other focuses include workplace communication, workplace language literacy and numeracy including at the higher levels of qualifications.

- VET is attentive to the relationship between theory and practice and on and off the job learning.

- The learning in VET is often related to a particular job and increasingly industry is also seeking generic, underpinning, and transferable skills.

- The delivery of VET in enterprises is frequently governed by costs and has been characterised by training focussed narrowly on the enterprise needs. This narrowness may be shifting due to the costs of having employees who cannot transfer their skills when needed.

- VET appears to be different to say early and primary education which focuses on formation of skills and attitudes whereas VET can involve a substantial amount of use of previously gained skills and previously held values and attitudes and on the 'unlearning' of these skills and attitudes.

If we believe that VET is unique then it is likely it will have a unique pedagogy that will be worth pursuing and using to enhance teaching and learning in VET.
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Other Developments
There is vast body of literature that needs to be drawn on to develop a pedagogy of VET. In addition to the developments presented to date some interesting work that will contribute to a pedagogy for VET is occurring in the areas of:

- the value of work in neuro-sciences to VET learning
- the impact of emotions on learning in VET
- the impact of age on learning in VET.

These three pedagogies are introduced through the seven one-page summaries structured around the ANTA Blue Skies work and some readings attached to this paper. The ANTA Blue Skies work will certainly contribute to the development of pedagogy of VET.

Pedagogies around the learning and teaching though new technologies, such as digital game-based learning are being given considerable space in the literature and Jock Grady and Donna Hensley will present their work on these in the next part of this session.

This paper is a preliminary look at a small selection of the recent work and literature that will contribute to a major paper on the development of a VET pedagogy to be developed in the near future.

VET PEDAGOGY Emerging Literature – a small selection

References

1. Australian National Training Authority. Various Authors ANTA Blue Skies (Sorry No Title Yet!), Brisbane 2002

   This booklet looks at 7 pieces of current and independent thinking on various aspects of teaching and learning in VET:
   a. Who are the learners? by Rennie and Wyn
   b. Implicit Knowledge by Kirschcr
   c. Emotions, Memory and Learning by Merson
   d. Ageing Minds by Zubrick
   e. The Learning Environment from Wills, Hedberg, Little and Oliver
   f. The Real World of Work by Whyte
   g. Assessment: Have We Forgotten Something? by Boud


   This text offers some interesting facts and insights into the history of VET within the economic history of Britain.


   This text offers some interesting facts and insights into the history of VET within the context of the economic history of Europe.

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This paper argues that both pedagogy and andragogy are passé’ for vocational education and that heutagogy or ‘self-determined learning’ is the way of the future for VET learning.


This paper argues that meta-cognitive skills are fundamental for learning-to-learn and for taking personal responsibility in learning. Opportunities should be available for learners to experience self-directedness at their current point of learning autonomy and assist them towards self-direction.


This paper looks at classical behaviourist theory and constructivist principles when applied to VET and while supporting the constructivist approach recommends further examination of their relative efficacies.


This is theoretical paper on implicit learning, which includes empirical research findings from the cognitive psychology domain to describe the relationship between implicit learning and metacognition.

9. Yan Fung Mok *Experiential Learning: Functional Attributes and Effectiveness*. University of Hong Kong, Hong Kong, 1999

This paper describes and presents the findings of an empirical study of the functional attributes of experiential learning for education students. The paper supports the use of experiential learning for this student group.


A paper which argues for the need for further work to be done on a pedagogy for workplace learning and proposes some components of the pedagogy including the structure of workplace learning and the access to and appropriation of workplace learning.


This paper attempts to develop new concepts and pedagogy around workplace learning in the new knowledge economy. The paper focuses on
reconceptualizing generic skills into individual and contextual skills so that they can be developed to align to the purpose of the workplace activity and prepare learners better for the future.

Other Readings

Turnbull, S. *The Role of Emotion in Situated Learning and Communities of Practice*. Lancaster University Management School, UK

Kiekens, D & De Coninck, P. *Making Older Adults More Employable – can it be done?* European Journal of Vocational Training No. 19 Jan-April 2000


WORKSHOP NOTES

1. **Who are the learners?**

Key Points

The ANTA Blue Skies piece on learners by Rennie and Wyn draws on longitudinal empirical research by Wyn which indicates that young people have high expectations of education. The findings indicate that they expect to secure higher-level jobs than their parents such as professional and managerial jobs and be able to balance their work, study and leisure.

The research also indicates that young people are increasingly disappointed (47%) and are beginning to realise that education alone will not secure them the jobs they expect.

Wyn also paints the changing picture of the adult learning a dramatically changing work environment and people with considerably more responsibilities and pursuits outside the learning environment.

**Implications for TAFE NSW Teaching and Learning**

In the ANTA Blue Skies work, Rennie in particular advocates some specific approaches to VET teaching and learning:

- teachers getting to know their students better
- teachers facilitating students getting to know one another more
- use of social capital - orient more to group work than individual work
- sharing of learning among students
- students as participants not just recipients of the teaching process
- teacher expertise in referral of students with personal problems
- teachers modelling of helpful learning styles eg - reciprocal feedback.

The paper on heutatgogy by Kenyon and Hase goes further than advocating more student responsibility for learning. They contend that pedagogy and andragogy are passé' with too dominant a role for the teacher, and that heutagogy or self-determined learning, is now required.

In the Blue Skies piece on assessment Boud also recommends more student determined assessment and including students setting criteria.

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Questions

How can teachers pursue information about their students to level that is sufficient for them to say they 'know' their students? How well should teachers in large system like TAFE NSW know their students? Do they 'know' them well enough now?

Should teaching and learning programs, resources and delivery be different in TAFE NSW to improve the 'fit' of our teaching and learning for our students? If yes what would be three key changes we could make?

Does TAFE NSW want to move to heutagogy? Is it ready for heutagogy?

2. Implicit Learning

Key points

'Tacit (silent) knowledge (Polanyi, 1958) and implicit learning (Berry) have in common the idea of not knowing what you do know or have learned.' Atherton p1. Other definitions of implicit knowledge include: knowledge which we routinely use or take for granted; knowledge which cannot be articulated and cannot therefore be taught but can be learned or acquired; all that one can do to teach is to provide opportunities for people to learn or examples; most effectively picked up in real world situation; about the process of learning rather than the content and, unconsciously learning a rule. Atherton p1

The current thinking on implicit learning is primarily found in the literature on cognitive psychology from higher education. Kirsner cites an example from the medical profession that indicates that explicit knowledge enables people to describe their knowledge better while implicit knowledge leads to superior performance. A critical concern is that implicit knowledge enables learners to be highly expert in a particular activity in a particular context but may not be transferable to new contexts unless it is made explicit. It is argued by some that metacognitive or higher order thinking skills are needed for transferability.

Implications for TAFE NSW Teaching and Learning

In the ANTA Blue Skies, the author Kirsner from the University of Western Australia takes a leap, from theory and some empirical research such as the learning of grammatical strings, into four strategies which may be useful for developing and making use of implicit knowledge in VET. These strategies are:

➤ more opportunities for practice
➤ better feedback - especially at the point of performance
➤ mirroring the training environment with the work environment.

In summary the literature indicates that experiential learning such as that described in Mok's paper will be useful in building implicit knowledge. It is argued that implicit knowledge is best used in the implicit mode. However questioning techniques may enable learners to draw inferences from implicit knowledge and possibly even use the implicit knowledge/skills in new contexts.

Questions

How can teachers in TAFE NSW learn about and encourage implicit learning?

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How can teachers in TAFE NSW make the most use of implicit learning?

3. **Emotions Memory and Learning**

**Key points**

Empirical evidence in relation to animals and children indicates that the impact of emotions on learning is significant. The relationship in children of poor socio-economic status to high levels of cortisol and anxiety and poor performance in children is worth exploring in adult learners. To date there is appears to be no empirical evidence about adult learners and emotions but VET providers may decide to draw inferences and respond while research continues in this area.

Certainly the evidence of the relationship of high levels of cortisol to high levels of anxiety and poor performance generally has major implications for workplace performance and workplace learning. In the ANTA Blue Skies piece on emotions, memory and learning Merson cites the research from Davidson and Kalin, which associates fearfulness and pessimism with high cortisol levels and diminished activation of the left prefrontal lobe of the brain. Merson then argues that:

- poor learning might be related to emotional not cognitive factors
- emotional self-awareness ought to improve learning ability
- the right balance is needed in students emotional and cognitive loads.

**Implications for TAFE NSW Teaching and Learning**

The ANTA Blue Skies work indicated that TAFE teachers might be able to support students by:

- developing teachers awareness of the possible impact of emotions on learning ability
- providing tasks that are a little more demanding than usual but not too demanding
- creating an environment that assists students to feel calm have sense of well-being
- supporting students to gain more emotional self-awareness.

**Questions**

What is the role of TAFE NSW in developing and supporting the emotional well-being of students?

Research appears to be showing that emotions are a more critical factor in learning than previously thought. How should TAFE teachers respond to this?

How can TAFE NSW develop expertise in neuro-science and its impact on learning?

4. **Ageing Minds**

**Key Points**

The ANTA Blue Skies piece on ageing minds contends that:

On the one hand

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Memory becomes more difficult with age
Age brings lost mental agility
Fluid intelligence, the ability to process rapidly, decreases with age

On the other hand
Crystallised intelligence - accumulated knowledge, vocabulary and general knowledge increases with age
Error rate decreases with age - learning slows and error rate slows with it
Decline in mental agility and memory is offset by cunning and experience.

NB. Zubrick offers evidence that:
Even by age 80 we have lost only 2% of our neuronal complement.
Age-related changes in ability to learn may be a hoax - based on lower expectations of older members of the community by other members.

Implications for TAFE NSW Teaching and Learning

It is difficult to say whether it is inadvisable for older learners to take up a course in an area they are unfamiliar with. The evidence does not support an argument for or against this.

The ANTA Blue Skies booklet suggests that as with all adult learning the evidence is that teaching and learning strategies should:
- make the learning personal, meaningful and powerful to that age group
- build associations and networks to strengthens the learning
- enable learners to share learning strategies.

Giving older learners more time to learn is also suggested as important as is assisting them to remember with each other.

Questions

How will TAFE NSW balance meeting the needs of the ageing population with the needs of other groups of students such as employed people wanting or needing a change of career, young people of school age, apprentices and trainees?

Which programs has TAFE NSW currently in pace that have been designed for or customised for ageing students?

How can TAFE NSW assist older students to 're-invent' themselves for employment?

5. The Learning Environment

Key points

The authors of the ANTA Blue Skies piece on the learning environment were asked if they believed that the learning around the new technologies had raised anything new about learning. The authors responded that there were new opportunities to learn about learning because the new technologies such as chat offered new opportunities for learning through interactivity and involvement in new types of activities such as simulations.

The authors advocate activity-based learning. They are comfortable with Training Packages because they argue that the competencies are the outcomes and learning can be generated through well-designed, goal-based activity goal-based. They also

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argue that competency based learning and problem solving learning activities are not incompatible as long as the students are asked questions and required to think and reflect on their learning.

Implications for TAFE NSW Teaching and Learning

The ANTA Blue Skies document argues that the VET learning environment should increasingly:

- involve real life problems
- require learners ‘doing’ activities
- demand thinking.

The authors also advocate emphasising opportunities for:

- problem solving
- feedback
- questioning
- reflection
- learning communities.

Questions

How will teaching and learning strategies in TAFE NSW best tackle the changing world of work, and changing technology?

What relative importance will TAFE NSW place on technology as a compared to direct teacher instruction, texts and other readings, workplace learning, and so on? How will funding be balanced?

6. **Real World of Work**

Key points

The written piece in the ANTA Blue Skies booklet depicts the world of work as a confusing and paradoxical place and a place of place of contradictions where workers need:

- to be competitive and cooperative
- to be me-first and you-first
- to be short-term winners and long-term strategists
- to be voracious consumers and gentle community builders
- to be valued workers and poorly paid
- to be keen to work and disinterested in jobs.

The value of formal education is questioned with many examples cited of people the author believes to be ‘successful’ who did not achieve outstandingly at school.

The flexibility and awareness of change amongst educational providers is also questioned.

The world of work is portrayed as decreasingly offering secure employment, requiring a need to look for opportunities and, entrepreneurship
Implications for TAFE NSW Teaching and Learning

The ANTA Blue Skies piece argues that the real world of work continues to need the familiar skills of:

- problem solving
- team playing
- being enterprising
- possessing strong interpersonal and communication skills.

The author also argues the need for:

- stamina
- self-insight
- capacity to manage one's own career and life.

Questions

How will TAFE NSW prepare people for world of work, which is full of contradictions, change, confusion, competing demands and paradoxes?

How will teachers assist students to develop stamina?, self-insight, and capacity? to manage one's career and life? Is this TAFE's role?

The written piece in the ANTA Blue Skies booklet depicts the world of work as a confusing and paradoxical place and a place of place of contradictions where workers need:

7. Assessment: have we forgotten something?

Key points

In the Blue Skies article Boud argues strongly for learners to have the major responsibility for their learning and assessment and that of their peers. He contends that the individual be heavily involved in determining their own assessment. He argues that good learners can identify what is required of them and they should therefore be able to set assessment for themselves – even setting the assessment criteria.

The assessment process in the learning program should enable the student to learn to identify good quality work so that when they enter the workplace they can assess themselves and others against this work.

Boud proposes the notion of sustainable assessment, which builds into all assessment tasks foundations for future learning, and in fact lifelong learning.

Implications for TAFE NSW Teaching and Learning

The ANTA Blue Skies piece indicates the need for:

- more negotiated learning and assessment programs
- more workplace assessment
- more assessment out side of the original environment in which the original training took place

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incorporating into learning programs how to determine high quality work and assessment criteria so that people can learn to identify standards and determine how to assess themselves — sue spotting

developing sustainable assessment events that assess longer term skills including how to appraise requirements in anew area

incorporate self and peer assessment as core assessment activity in VET programs

Questions

How will TAFE NSW reconcile the need for formal assessment up against competency standards with the moves towards more negotiated assessment and more self-determination of assessment events and criteria by learners?

What will TAFE NSW need to do in terms of its programs and assessment if it is to incorporate more sustainable assessment activity?