

# Applied Learning design in an online VET teacher-education course: A pedagogical framework that responds to the needs of mature-aged, employed students

---

JILLIAN DOWNING

## Abstract

As one of the major contributors to the education sector in Australia, Vocational Education and Training (VET) operates within a number of contexts, including schools, private training providers and Technical and Further Education (TAFE) colleges. It takes responsibility for the continuing education of nearly two million students (from high school age to mature age) each year. Within VET there are approximately eighty thousand teachers employed, mostly on a part-time basis, delivering a wide range of courses (e.g., construction, hospitality, aged care, business, retail, tourism, arts, child-care) and catering for both employed students (e.g., apprentices) and pre-employment students. Unlike many other countries, teachers employed within the VET sector in Australia are not required to hold a degree in teaching, although a growing number are interested in pursuing a university degree in order to progress their career and professionalism.

This paper considers four aspects of VET teacher-education in Australia. Firstly, it provides an overview of the qualifications and experience required by providers of VET and identifies the opportunities universities have to offer additional professional development. As VET teachers are likely to be mature-aged, juggling work with study and been away from formal study for some time, there is a need for providers to consider how best to respond to these students. Secondly, this paper describes the approach taken by the University of Tasmania in a relatively new VET teacher-education programme, a *Bachelor of Education (Applied Learning)*. The specialty focus of the course, ‘applied learning’, represents the desired pedagogical approach in VET settings – bringing application and theory together in an inte-

grated fashion in order to facilitate effective learning. An innovative approach was adopted to the design and development of units within the course, in order to create a learning environment that ‘walked the talk’ of applied learning whilst still reflecting the academic rigor expected in a university degree course. A set of six theoretically underpinned ‘applied learning’ design principles were articulated, which guided teaching staff as the course was developed, incorporating aspects such as student collaboration, integrating learning tasks with workplace roles, and ensuring that assessment tasks were authentic and applied.

The third part of this paper considers a recently completed doctoral study on the effectiveness of the design principles guiding the course. The findings led to a greater understanding of the nature, characteristics and needs of the students, including a vulnerability for self-doubt and withdrawal but also a desire to contribute altruistically and positively to the learning community. The investigation concluded that an applied learning approach that respects and integrates the students’ lived experience can lead to positive, even transformational outcomes for students. The study also identified ways for course designers to capitalise on the affordances of web-based technology to support geographically and characteristically diverse students.

Finally, this paper considers the future of VET teacher-education in Australia and more broadly, considering the growing demand for high quality VET education and the subsequent role for universities. Most importantly, the paper contends that providers must consider how best to ensure a relevant, engaging and rewarding Higher Education experience for a diverse and dedicated VET workforce, who are developing the next generation of workers in a wide-range of industries and professions.

## **Keywords**

Applied Learning, authentic learning, VET teacher-education, Higher Education pedagogy, online learning, design principles.

## **Introduction and background**

The Vocational Education and Training (VET) sector fulfils a critically important role in Australia in preparing adolescent and mature-aged students for their chosen vocation or career. Teachers employed within the VET sector in Australia are likely to have had a successful career within their specialist area before moving into a teaching role. For example, they have been carpenters, electricians, chefs, hairdressers or mechanics and, typically, become teachers through a desire to give back to their industry (Productivity Commission, 2011). As VET teachers, their job role extends beyond teaching to working closely with employers and industry partners to support the apprentices and employees in their chosen careers.

Since the 1990s, Australia has adopted a national approach to VET, with a suite of training packages that are delivered by teachers in Registered Training Organisations.

ations (RTOs). A training package is a set of nationally endorsed standards and qualifications for a specific industry, (e.g., construction or hospitality). Each training package is developed by the related national Industry Skills Councils (ISCs) and should represent the desired skills and knowledge required by employees in that sector. Qualifications within each training package usually start with a foundational Certificate I and progress to a more advanced level, such as a Diploma. Every RTO that delivers training packages must conform with national requirements relating to the quality of delivery and assessment of the qualifications, or risk losing the right to offer their chosen training package.

Unlike many other countries, teachers employed in the VET sector in Australia are not required to hold a degree in teaching. Rather, the minimum requirement to teach or assess students enrolled in any of the VET qualifications is a Certificate IV in Training and Assessment (Cert IV TAE), which is a relatively short course to complete. Additionally, all VET teachers should have relevant industry experience and hold the vocational qualifications (such as Diplomas) in their subject area, at one level above the level that they are teaching. While some VET teachers may have university degrees in their discipline area (e.g., engineering or business), about 60 % of VET teachers do not (Productivity Commission, 2011). Hence, the typical educational profile of a VET teacher is quite different to a teacher in the school sector, who has completed a four year degree in teaching, or a degree in their discipline area (e.g., science) followed by a post-graduate degree in teaching.

While holding a university degree in teaching is not mandatory, many VET teachers are interested in pursuing a higher-education qualification in order to improve their knowledge and skills and advance their career. The VET teachers who decide to undertake university teacher-education courses are, however, likely to be quite different to the traditional university student. Many VET teachers, particularly those from trades with a traditional apprenticeship pathway, such as construction, hairdressing, and the retail sector, left school at a relatively early age and not consider themselves to be ‘academic’. Many will be first-in-family to attend university and, as mature-aged entrants, have been away from formal study for a considerable time. They are also likely to be adding university study to other roles such as employee or parent. With these characteristics, VET teachers undertaking university study are very likely to fit the description of ‘non-traditional’ students (Munro, 2011) and as such, are representative of a growing segment of the university student cohort (Allen & Seaman, 2014). For these students, engaging in Higher Education is a daunting prospect and a supportive, constructive and positive learning and teaching environment is needed in order to attract and retain enrolment (Gilardi & Guglielmetti, 2011). Yet despite increasing numbers of non-traditional students, there is little evidence that universities are actively responding to their needs (Meuleman, Garrett, Wrench & King, 2014). This may be a contributing factor to the current situation in Australia where there is a struggle to maintain healthy student numbers in VET teacher-education programmes, and a consequential reduction in the number of courses on offer.

## Applied Learning in VET teacher education

In 2012, the University of Tasmania began a new VET teacher-education course, a *Bachelor of Education (Applied Learning)*. Historically, applied learning is most commonly referred to as ‘learning with your hands’ and pedagogically is most closely aligned with experiential learning (Dewey, 1938; Kolb, 1984). It melds together the two kinds of knowledge that philosopher Gilbert Ryle (1949) suggested: *knowing that* and *knowing how*. Ryle (1949) proposed that integrating theoretical knowledge (*knowing that*) with practice (*knowing how*) enables a student to move beyond being trained and into a space where the skills of lifelong learning are internalised. Thus, an applied learning approach has the potential to bring together theory and practice in a manner that builds the type of attributes sought in university graduates. Although usually associated with the VET sector, the Higher Education literature reveals a limited but growing interest in applied learning through “the kind of pedagogical principles and practices associated with engaged scholarship, communities of practice, civil engagement, and critical pedagogy” (Schwartzman & Bouas Henry, 2009, p. 5). Ash and Clayton (2009) suggest that an applied learning approach in Higher Education is:

*... grounded in the conviction that learning is maximized when it is active, engaged and collaborative. Each applied learning pedagogy provides students with opportunities to connect theory with practice, to learn in unfamiliar contexts, to interact with others unlike themselves and to practice using knowledge and skills (p. 25).*

Applied learning pedagogy focuses, therefore, on connecting theory with practice through context-based activity, and as such is broadly aligned with authentic learning (Herrington, Reeves & Oliver, 2010), situated and experiential learning (Brown, Collins & Duguid, 1989; Dewey, 1938; Kolb, 1984), the characteristics of adult education (Knowles et al., 2011; Mezirow, 1991) and communities of practice (Lave & Wenger, 1991).

Drawing upon this literature and more broadly, a set of applied learning design principles was created to guide the development and delivery of the four year, fully online, undergraduate degree at the University of Tasmania. Table 1, below, describes each design principle guiding the course, along with its theoretical underpinning and enactment into the course.

**Tab. 1** The Applied Learning Design Principles, their theoretical underpinnings and enactment into the course.

<i>Applied Learning Design Principles</i>		
<i>Design principle</i>	<i>Theoretical underpinning</i>	<i>Students will be:</i>
<b>1. Provide learning activities that connect theory and application in authentic contexts.</b>	<p>Experiential Learning Theory (Dewey, 1938)</p> <p>Authentic Learning (Herrington, Reeves, &amp; Oliver, 2010)</p> <p>Situated learning (Brown, Collins, &amp; Duguid, 1989)</p> <p>Realistic Teacher Education (Korthagen, 2001)</p> <p>Applied teacher-education (Darling-Hammond, 2006)</p>	<ul style="list-style-type: none"> <li>Involved in activities that integrate theoretical concepts with practical application;</li> <li>Encouraged to make connections between what they are studying and the real workplace issues and challenges;</li> <li>Engaging with authentic problems and integrating those with their studies; and,</li> <li>Working closely with practitioners to better understand the skills and knowledge required in the workplace.</li> </ul>
<b>2. Recognise the lived experience of students.</b>	<p>Adult learning theory (Lindeman, 1926; Knowles, et al., 2011)</p> <p>Transformational learning (Mezirow, 2000)</p> <p>Workplace learning (Billett, 2004)</p> <p>Reflective practice (Brookfield, 1995; Schön, 1983)</p>	<ul style="list-style-type: none"> <li>Recognised as having relevant and valuable life experiences;</li> <li>Encouraged to critically reflect on those experiences in the learning process;</li> <li>Invited to consider alternative approaches and perspectives; and,</li> <li>Engaged in deepening their understanding through new experiences in a range of settings.</li> </ul>
<b>3. Provide meaningful opportunities for the collaborative construction of knowledge within the learning community</b>	<p>Authentic Learning (Herrington et al., 2010)</p> <p>Communities of Practice (Lave &amp; Wenger, 1991)</p> <p>Learning communities (Salmon, 2011; Shulman, 2004)</p> <p>Community of Inquiry framework (Garri-son, Anderson &amp; Archer, 2001)</p>	<ul style="list-style-type: none"> <li>Encouraged to take on roles that enable them to contribute meaningfully to the online community;</li> <li>Invited to contribute altruistically to the learning environment for the benefit of their peers; and</li> <li>Supported as they undertake collaborative activities, in recognition of the challenges that lie within it, particularly in the online environment.</li> </ul>
<b>4. Encourage the development of a professional identity through collegial interactions in a range of settings.</b>	<p>Identity and practice (Wenger, 1999)</p> <p>Reflective practice (Brookfield, 1995; Schön, 1983)</p> <p>Communities of Practice (Lave &amp; Wenger, 1991)</p> <p>Dialogue of Inquiry (Kozminsky, 2011; Loughran, 2006)</p>	<ul style="list-style-type: none"> <li>Encouraged to be actively involved as a member of their professional community;</li> <li>Building evidence of their attainment of the professional standards of teacher-education graduates;</li> <li>Engaged in robust discussions and interactions with their peers and teaching staff on a wide range of topics relevant to their profession; and,</li> <li>Actively building their professional identity.</li> </ul>
<b>5. Provide authentic assessment tasks that reflect the way the knowledge will be used in real work settings.</b>	<p>Authentic assessment (Herrington &amp; Herrington, 2006)</p> <p>Sustainable assessment (Boud, 2006)</p> <p>Formative feedback (Black &amp; William, 1998; Hattie, 1999)</p> <p>Authentic assessment in teacher-education (Darling-Hammond, 2000; Shulman, 2004)</p>	<ul style="list-style-type: none"> <li>Completing assessment tasks that require the skills and knowledge associated with their future roles in the workplace;</li> <li>Creating practical products that will be meaningful and useful to learners in their profession;</li> <li>Participating in peer-review and formative feedback processes; and,</li> <li>Engaging in a number of activities in any one assessment task.</li> </ul>
<b>6. Encourage an increasing level of student ownership of learning.</b>	<p>Student autonomy in learning (Boud, 1988)</p> <p>Identity and ownership (Chickering &amp; Reisser (1993)</p> <p>Ownership of Learning (Dudley-Marling &amp; Seale, 1995)</p> <p>Adult learning theory (Knowles et al., 2011)</p> <p>Reflective practice (Brookfield, 1995)</p> <p>Authentic learning (Herrington et al., 2010)</p>	<ul style="list-style-type: none"> <li>Encouraged to take increased responsibility for their approaches to learning and assessment;</li> <li>Engaged in activities that draw upon their unique experiences and contexts;</li> <li>Evidencing their achievements in an ePortfolio; and,</li> <li>Collaborating with peers towards mutual achievement of learning goals.</li> </ul>

In summary, the course design aims to ensure an engaging, meaningful experience for the students, responding appropriately to their likely characteristics and needs and role-modelling teaching approaches that they can, in turn, consider in their own classrooms. Students engage in their studies through a web-based Learning Management System (Desire2Learn), where they access a range of learning resources and activities and interact with their student peers and teachers through both synchronous and asynchronous modes of communication. Being fully online, students are able to adopt an ‘anytime/anywhere’ approach to their study, and teaching staff are purposefully ‘present’ in the online space – engaging with activities and responding to questions promptly and constructively. Enrolments in the course have grown significantly since its inception in 2012, defying the national VET teacher-education trend and enabling the course to become the most successful VET teacher-education course currently on offer in Australia.

## **Evaluation of the applied learning design principles guiding the course**

A doctoral study (Downing, 2015) investigated the experiences of students in the Bachelor of Education (Applied Learning) over an eighteen month period, using the iterative process of design-based research to assess the influence and effectiveness of the applied learning design principles. Design-based research (DBR) is also known as *design research*, *educational design research*, *design experiments* and *development research*, and involves an iterative process of analysis, design, development and implementation of a specially designed intervention (Design-based Research Collective, 2003). Initially conceived and articulated by Collins (1992) and also Brown (1992), it is an approach that is particularly appropriate for educators who seek to incorporate research into practice and better understand the ‘messiness’ of real-world practice in a particular context. Data were collected through interviews, focus groups and student artefacts (such as assignments and online forum postings). Qualitative data analysis sought to identify themes inductively, which were then explored at a greater depth through a second layer of investigation.

The study investigated the extent to which the applied learning design principles fostered an environment where students could authentically apply what they were learning about to everyday problems and opportunities in real workplaces. Consistent with the design principles, students were expected to take a greater level of responsibility for their learning, and connect their studies to their own, unique, context in both the learning and assessment activities. This approach represents the heart of applied learning pedagogy recognising and responding to the individuality of meaning-making and knowledge creation, and using that individuality to create more meaningful links between theory and practice. Over the three iterations of the study, the students showed a gradual and, in some cases, transformational change in the role they undertook in their own learning and in their confidence to grow professionally. Perhaps most indicative of the effectiveness of the

design principles was evidence that students were changing their own teaching practice in response to how they experienced their university learning environment.

The study revealed that applied learning design principles encouraged the students to reconceptualise their role in the learning environment. This often began with a need to (re)examine their beliefs about themselves as learners and the way in which they engaged with their teachers and peers. Rather than being passive receivers of content from an ‘expert’ teacher, they were introduced to new concepts, ideas, theories, frameworks and such like, and asked to examine and interrogate those in light of their existing perspectives and beliefs. Many participants with negative connotations from their school days were initially reluctant to show any behaviour that could be seen as challenging the authority of the teacher, but over time that tendency dissipated, and levels of self-confidence grew.

The findings from the doctoral study revealed that an applied learning approach that respects and integrates the students’ experience and context can lead to positive, even transformational outcomes for students. Of critical importance was the need for immediate relevance of what was being studied to the every-day realities of the students’ working lives – they wanted to ‘put their learning to work’ as soon as possible, both to maximise the value of their study and to help them to engage and maintain their commitment to study. Simply put, if studying in the course did not help them with their current and real challenges at work, withdrawal from enrolment was likely.

The conclusions of study contributed new knowledge about the characteristics and needs of non-traditional students and their behaviour in the learning environment. The investigation uncovered a persistent vulnerability for self-doubt and withdrawal, but this sat alongside a strong desire to contribute altruistically to the learning community. Indeed, it appears that the manner in which the design principles ensure opportunities to give meaningfully to the learning community may actually help non-traditional students to address concerns over their worthiness and capability to succeed in Higher Education.

## **Implications for pedagogical design in VET teacher education in universities**

The study concluded that applied learning design can assist course developers in building an environment that more effectively links university study to the workplace and facilitates meaningful professional development. Additionally, the findings revealed that web-based technology can offer effective and engaging ways to support geographically and characteristically diverse students. Importantly too, given the growing number of non-traditional students entering university, the applied learning approach responds well to those students with a low sense of self-efficacy, who need encouragement and support while developing the confidence to engage fully in the university environment.

The study also found that teaching staff in universities should be open to reconceptualising their role in the learning environment; moving from being seen as the ‘expert’ to more of a facilitator, by helping students connect what they are learning with their real workplace context. This requires teaching staff to be more open to allowing a degree of modification to learning and assessment tasks in order for those tasks to be more meaningful and rewarding (both intellectually and pragmatically), and truly respecting what the students brought to the learning environment.

## Summary

This paper has provided an overview of the context in Australia for VET teachers, and their continuing professional development and education. Importantly, it appears that a growing number of VET teachers are interested in pursuing a Higher Education experience, but they will need a supportive, constructive and meaningful course in order to feel confident, engaged and motivated.

The applied learning design principles that guided the course development and delivery, and the findings of the accompanying doctoral study, may well be a useful resource for other Higher Education providers seeking to build an appropriate course for VET teachers. The applied learning approach appeals on a number of levels – it responds to the characteristics of non-traditional students, it models the desired approach in VET, and it is suitable for an online or web-based mode of delivery. It is noted that this doctoral study did not aim to be a comparative one in terms of what is offered overseas. Therefore, in terms of potential further research, a study on the effectiveness of the design principles in another context or discipline would be a valuable addition to the limited literature on this pedagogical approach – an approach that appears to offer much to the Higher Education sector.

## References

---

- Allen, I. E., & Seaman, J. (2014). *Grade change: Tracking online education in the United States*. Newburyport: Babson Survey Research Group and Quahog Research Group.
- Ash, S., & Clayton, P. (2009). Generating, deepening and documenting learning: The power of critical reflection in applied learning. *Journal of Applied Learning in Higher Education*, pp. 25–48.
- Billett, S. (2004). Workplace participatory practices: Conceptualising workplaces as learning environments. *The Journal of Workplace Learning*, pp. 312–324.
- Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in education: Principles, policy and practice*, pp. 7–74.
- Boud, D. (2000). Sustainable assessment: Rethinking assessment for the learning society. *Studies in Continuing Education*, pp. 151–167.
-



- Brookfield, S. (1995).** *Becoming a critically reflective teacher*. San Francisco, CA: Jossey-Bass.
- Brown, A. (1992).** Design experiments: Theoretical and methodological challenges in creating complex interventions on classroom settings. *The Journal of the Learning Sciences*, pp. 141–178.
- Brown, J. S., Collins, A., & Duguid, P. (1989).** Situated cognition and the culture of learning. *Educational Researcher*, pp. 32–42.
- Collins, A. (1992).** Towards a design science of education. In E. Scanlon & T. O'Shea (Eds.), *New directions in educational technology* (pp. 15–22). Berlin, Germany: Springer-Verlag.
- Darling-Hammond, L. (2006).** Constructing 21st-century teacher education. *Journal of Teacher Education*, pp. 300–314.
- Design-based research: An emerging paradigm for educational inquiry (2003).** *Educational Researcher*, pp. 5–8.
- Dewey, J. (1938).** *Logic, the theory of inquiry*. New York, NY: Holt & Co.
- Downing, J.** Unpublished doctoral thesis: Applied Learning Design in an online teacher-education course. Retrieved from <http://researchrepository.murdoch.edu.au/id/eprint/30925>
- Garrison, R., Anderson, T., & Archer, W. (2000).** Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, pp. 87–105.
- Gilardi, S., & Guglielmetti, C. (2011).** University life of non-traditional students: Engagement styles and impact on attrition. *The Journal of Higher Education*, pp. 33–53.
- Herrington, J., Reeves, T., & Oliver, R. (2010).** *A guide to authentic e-learning*. New York, NY: Routledge.
- Herrington, T. & Herrington, J. (2006).** *Authentic learning environments in higher education*. London, UK: Information Sciences Publishers
- Knowles, M., Holton, E., & Swanson, R. (2011).** *The adult learner: The definitive classic in adult education and human resource development* (7th ed.). Oxford, UK: Elsevier.
- Kolb, D. (1984).** *Experiential learning: Experience as a source of learning and development*. Englewood Cliffs, NJ: Prentice-Hall.
- Korthagen, F. (2001).** *Linking practice and theory: The pedagogy of realistic teacher education*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Kozminsky, L. (2011).** Professional identity of teachers and teacher educators in a changing reality. In I. Zogla & L. Rutka (Eds.), *Teachers' life-cycle from initial teacher education to experienced professional* (pp. 12–19). Riga, Latvia: Proceedings of the Association for Teacher Education in Europe 36th Annual Conference.
- Lave, J., & Wenger, E. (1991).** *Situated learning: Legitimate peripheral participation*. Cambridge, UK: Cambridge University.
- Loughran, J. (2006).** *Developing a pedagogy of teacher education: Understanding teaching and learning about teaching*. London, UK: Routledge.
- Meuleman, A. M., Garrett, R., Wrench, A., & King, S. (2014).** “Some people may say I’m thriving....but”: Non-traditional students’ experiences of university. *International Journal of Inclusive Education*.
- Mezirow, J. (1991).** *Transformative dimensions of adult learning and education*. San Francisco, CA: Jossey-Bass.

- Munro, L. (2011).** “Go Boldly, Dream Large!”: The challenges of confronting non-traditional students at university. *Australian Journal of Education*, pp. 115–131.
- Productivity Commission & Australian Government Productivity Commission. (2011).** *Vocational Education and Training workforce: Research Report*. Canberra, Australia.
- Ryle, G. (1949).** *The concept of the mind*. New York, NY: Banes and Noble.
- Salmon, G. (2011).** *E-moderating: The key to teaching and learning online* (3rd ed.). New York, NY: Routledge.
- Schön, D. (1983).** *The reflective practitioner: How professional think in action*. London, UK: Temple Smith.
- Schwartzman, R., & Bouas Henry, K. (2009).** From celebration to critical reflection: Charting the course of scholarship in applied learning. *Journal of Applied Learning in Higher Education*, 1, pp. 3–25.
- van den Akker, J., Gravemeijer, K., McKenney, S., & Nieveen, N. (Eds.). (2006).** *Educational design research*. Abingdon, UK: Routledge.