

Examining the Development of the Victorian Certificate of Applied Learning and Its Implications for Schools and Teacher Education in Australia

DAMIAN BLAKE

Deakin University, Australia

DAVID GALLAGHER

Victorian Curriculum and Assessment Authority (VCAA), Australia

The Victorian Certificate of Applied Learning (VCAL) is a very successful senior secondary school qualification introduced in the Australian state of Victoria in 2002. Applied learning in the VCAL engages senior students in a combination of work-based learning, service-learning, and project-based learning and aims to provide them with the skills, knowledge, and attitudes to make informed choices regarding pathways to work and further education. The program has enjoyed rapid growth and its system-wide adoption by Victorian secondary schools, Technical and Further Education (TAFE) institutions, Registered Training Organizations (RTOs), and Adult and Community Education (ACE) providers has broadened significantly the range of senior schooling pathway options for young people. This paper will examine reasons for developing an applied learning senior secondary certificate and its rapid growth in Victoria since 2002. The authors draw on a number of case studies to profile the unique nature of applied learning in the VCAL, including its dimensions of service learning, work-based learning, and project-based learning. These case studies are also used to discuss a number of implications that have emerged from the use of applied learning in the VCAL, including approaches to teaching and assessment that will support applied learning and the development of new partnerships between VCAL providers and community partners. Finally, the paper considers significant implications the VCAL has created for teacher education in Victoria by discussing the new Graduate Diploma of Education (Applied Learning) developed by Deakin University.

Improving the education participation rates of young people has become a significant social and economic goal for successive Australian and international governments (OECD, 2001). Such a strategy is now widely understood to improve a nation's economic competitiveness as well as address issues of social inclusion and reduction of poverty (Access Economics, 2005; Billett & Seddon, 2004; Considine, 2006; Lamb & Rice, 2008). To achieve these increased participation rates there has emerged demand for new policies and practices in education and training emphasizing the need to increase the quality and relevance of learning to the lives of young people, particularly in their middle and post-compulsory years of schooling (UNESCO, 2008). Education institutions in many countries now place much more significance on the need for high quality alternative education opportunities (Aron, 2006), such as the "hands-on" or "applied" approaches to students' learning. Alongside these new directions in education there also emerge new questions for educators in secondary schools and higher education: (1) What do these high quality programs look like and what is the nature of their applied learning? and (2) What are the implications for teachers' professional practice and how can applied learning be used in higher education to prepare the new "applied learning teachers" required in secondary schools?

This paper explores these questions in two stages. In the first instance, the authors draw on current education participation trends in Australia to examine the development of the Victorian Certificate of Applied Learning (VCAL) currently being offered to senior high school students in Victoria, Australia. They then provide an outline of the VCAL in its current form and draw on two case studies to discuss the nature of the applied learning in the program. The second part of the paper discusses implications for higher education programs targeting the preparation of pre-service teachers in Victoria. The authors draw on the recent development of a Graduate Diploma of Education (Applied Learning) which seeks to utilize applied learning in higher education to prepare pre-service teachers for teaching in the VCAL.

AUTHOR NOTE: Damian Blake, Ph.D., senior lecturer in applied learning in the School of Education, Deakin University Waurm Ponds Campus, Geelong Victoria Australia; David Gallagher, Victorian Curriculum and Assessment Authority (VCAA), East Melbourne Victoria Australia. Correspondence concerning this article should be addressed to: Damian Blake, School of Education, Deakin University Waurm Ponds Campus, Geelong Victoria Australia 3217 (email: damian.blake@deakin.edu.au) or David Gallagher, Senior Manager for the Victorian Curriculum and Assessment Authority (VCAA), 41 St Andrews Place, East Melbourne Victoria Australia 3002 (email: gallagher.david.j@edumail.vic.gov.au)

LINKING EDUCATION TO THE ECONOMY

Since the early 1990s many governments around the world have linked education policy to economic reform. In Australia, for example, some have argued: “Education is increasingly becoming the ‘engine room’ of modern economies...A more educated worker is a more productive worker, and investment in education provides a pool of more skilled labor” (Access Economics, 2005, p. 8). Like other countries, much of the Australian education policy reform agenda has aimed to increase the proportion of young people who complete at least 12 years of schooling.

Each year approximately 80% of young Australians complete a level of education and training equivalent to 12 years of schooling (Australian Bureau of Statistics, 2007). Research conducted by the Organization for Economic Co-operation and Development (OECD) estimates this to be lower than other OECD countries, such as 88% in the United States and Canada, 91% in Germany, and 94% in Korea (OECD, 2008). Modeling based on Australian rates of participation in education suggests that boosting the proportion of young people completing school or an apprenticeship to 90% by 2010 would increase workforce numbers by 65,000, boost economic productivity, and expand the economy by more than nine billion Australian dollars (Access Economics, 2005; Applied Economics, 2002). It is therefore not surprising that like other states in Australia, the Victorian Government has set the goal that by 2010 it expects that 90% of all young people will have achieved Year 12 or its equivalent (Kirby, 2000; Kosky, 2002; Lamb & Rice, 2008).

A DISCOURSE OF RISK AND “EARLY SCHOOL LEAVERS”

A discourse of “risk” has now emerged alongside the remaining 20% of “early school leavers” and students who remain in school considered to be “at risk” of leaving. Contributing to this discourse of risk is the broader realization that completing 12 years of schooling significantly improves life transitions beyond school and reduces a young person’s chances of falling into long-term unemployment (DSF, 2006; Lamb & Rice, 2008; Woods, 2007).

Students who do not complete Year 12 or its equivalent are more likely to become unemployed, stay unemployed for longer, have lower earnings, and over the course of their lives, accumulate less wealth, a problem that will only increase with time as employers seek a more highly skilled workforce. The connection is simple – retention, engagement and higher levels of education open up broader opportunities that lead to better personal, social and economic outcomes.

(Lamb & Rice, 2008, p. 2)

However, this discourse of risk is not limited to the personal risks faced by young people who are “early school leavers” and is also reflected in perceived risks to wider society. In the Australian state of New South Wales (NSW), for example, the Bureau of Crime Statistics and Research argues: “If long term unemployed males aged between 15-24, continued to the end of senior high school the reduction in break, enter and stealing over the course of a year would amount to almost 15 per cent” (Chapman, Weatherburn, Kapuscinski, Chilvers, & Roussel, 2002, p. 10).

Policy aimed at improving participation in the senior years of schooling therefore addresses the social risks associated with potential exclusion of young people from the important institutions of wider society, and the potential political risks created by perceptions of disenfranchised youth. The stakes are considered to be high for both “early school leavers” and their communities, creating a new moral imperative for schools to improve further young people’s participation in the senior years of schooling.

A DEMAND FOR NEW “ALTERNATIVES” AND THE VCAL

Increasing retention rates in Australian schools since the 1990s (Australian Bureau of Statistics, 2007) have already created new challenges for schools and teachers as they attempt to accommodate the greater diversity of senior students’ pathway interests and adjust to changing “learning temperaments” in their classrooms (Henry & Grundy, 2003). Schools and teachers are now being challenged to confront the many reasons young people give for leaving school early, including: a lack of perceived relevance of school; a desire to work and pursue vocational pathways; limited experiences of success in academic programs; a reduced tolerance for typical school rules; and problematic relationships with teachers (Blake, 2007).

Despite the rapid expansion of Vocational Education and Training (VET) options in Australian secondary schools encouraged by Australia’s Ministerial Council on Employment, Education, Training and Youth Affairs (MCEETYA, 2004), there remains a struggle to achieve the 90% target for participation. The continuing issue for schools and governments is that for many students in their senior years, a senior school certificate and pedagogical approaches to student learning that do not accommodate these students’ broader interests and learning temperaments may not meet their needs. These are also themes that have emerged in the *Going for Growth* report released by the Organization for Economic Co-operation and Development: “The high share of the low skilled in unemployment and inactivity, especially early school leavers, suggests that the upper-secondary education system’s emphasis on prep-

aration for university is too narrow, hampering innovative activities and productivity growth” (OECD, 2007, p. 2).

These issues were first identified in Victoria in 2000 by the *Ministerial Review of Post Compulsory Education and Training Pathways in Victoria* (Kirby, 2000). This review indicated that a broader range of programs was required to meet the needs of the many young people who choose to leave school early because they were discouraged by the limited curriculum choices offered by the existing Victorian Certificate of Education (VCE). The report also identified the need for new ways of thinking about senior school pedagogy and the social contexts of schooling in these years. The report states that:

Those who have difficulties with current arrangements will typically need different learning contexts. (p. 10)

Those young people who leave school before completing Year 11 have experienced difficulties more often and have not adjusted well either to the VCE or to school as a social setting. (p. 53)

In a context of increasing retention rates, many young people felt constrained by the current education system because their individual learning, personal development and transition needs could not be fully met by the traditional approaches to teaching and learning in the upper secondary years of schooling. As a result, many did not achieve their best results and others left school early, inadequately prepared for work and future learning.

A DEMAND FOR APPLIED LEARNING

The VCAL was therefore developed in Victoria as a state-wide senior school credential through which participating students receive recognition for their achievements in programs that have traditionally not provided credit within a senior secondary school qualification. Applied learning is central to the VCAL and students can achieve formal recognition of learning that occurs in a diverse range of non-traditional learning settings, including structured workplace learning placements, part-time work, locally developed programs, community projects, and participation in youth development programs. Evidence of the strong demand for such an applied learning certificate being made available to senior school students is found in the very rapid growth of the VCAL since its initial trial in 2002, as summarized in Table 1.

It is also worth noting that the VCAL is delivered by a range of different providers, including: government, Catholic and Independent secondary schools; Technical and Further Education (TAFE) Institutions;

and Adult and Community Education (ACE) organizations. In many cases a student's VCAL may be the product of partnership arrangements between several of these organizations to allow students to achieve a combination of school-based studies and vocationally-based studies and

Table 1: Growth in VCAL since 2002 (Victorian Curriculum and Assessment Authority, 2009)

Year	Enrollment	Number of Providers
2002	546	22 Pilots
2003	5,127	239
2004	8,125	322
2005	10,692	380
2006	12,326	401
2007	14,093	418
2008	15,641	423

the eventual completion of all four curriculum strands of the VCAL. The overall curriculum design of the VCAL has been summarized in Figure 1.

The Victorian Curriculum and Assessment Authority supports teachers' use of applied learning in the VCAL by encouraging the context-based integration of theory and practice through a "hands-on" and real-life approach to learning and teaching. Key principles supporting this "applied learning" approach include: (1) Start where the learners are; (2) Negotiate the curriculum. Engage in a dialogue with the learners about their curriculum; (3) Share the knowledge. Recognize the knowledge learners bring to their learning environment; (4) Connect with communities and real-life experiences; (5) Build resilience, self-confidence, self-worth – consider the whole person; (6) Integrate learning – the whole task and the whole person (in life we use a range of skills and knowledge. Learning should reflect the integration that occurs in real-life); (7) Promote diversity of learning styles and methods (everyone learns differently - accept that different learning styles require different learning/teaching methods, but value experiential, practical and "hands-on" ways of learning); and (8) Assess appropriately. Use the assessment method that best "fits" the learning content and context (Victorian Curriculum and Assessment Authority, 2006).

APPLIED LEARNING FOR RE-ENGAGEMENT

Longitudinal research investigating the post-school destinations of young Victorians notes that "some 87.8 percent of VCAL

Figure 1: VCAL Design

VCAL Program Design
<p>The Victorian Certificate of Applied Learning is <i>accredited at three levels</i>:</p> <ul style="list-style-type: none"> ▪ Victorian Certificate of Applied Learning – Foundation ▪ Victorian Certificate of Applied Learning – Intermediate ▪ Victorian Certificate of Applied Learning – Senior <p>VCAL learning programs are comprised of <i>four curriculum strands</i> and teachers are encouraged to work with students to organize applied learning initiatives that will integrate across these strands. The four strands are:</p> <ul style="list-style-type: none"> • Literacy and Numeracy Skills • Work Related Skills • Industry Specific Skills • Personal Development Skills. <p><i>Literacy and Numeracy Skills (LN) Strand: Purpose Statement</i></p> <p>The purpose of literacy curriculum selected for this strand is to enable the development of skills, knowledge and attitudes in literacy that allow progression in the main social contexts of family, employment, further learning and citizenship.</p> <p>The purpose of the numeracy curriculum is the ability to use mathematical skills in order to carry out purposes and functions within society related to designing, measuring, constructing, using graphical information, money, time and travel, and the underpinning skills and knowledge for further study in mathematics or related fields.</p> <p><i>Work Related Skills (WRS) Strand: Purpose Statement</i></p> <p>The purpose of the Work Related Skills strand is to develop employability skills and knowledge and attitudes valued within the community and work environments as a preparation for employment.</p> <p><i>Industry Specific Skills (ISS) Strand: Purpose Statement</i></p> <p>The purpose of the Industry Specific Skills strand is to enable the development of skills, knowledge and attitudes related to one or more vocational contexts in preparation for progression to further learning or employment.</p> <p><i>Personal Development Skills (PDS) Strand: Purpose Statement</i></p> <p>The purpose of the Personal Development Skills strand is to develop skills, knowledge and attitudes that lead toward:</p> <ul style="list-style-type: none"> • social responsibility • building community • civic responsibility, for example through volunteering and working for the benefit of others • improved self-confidence and self-esteem • valuing civic participation in a democratic society.

students agreed or strongly agreed that the opportunity to enroll in VCAL was an important factor in their staying at school” (Teese, Clarke, & Polesel, 2007, p. 7). Students expressed a deep appreciation for the experiential nature of the VCAL when asked to rate on a five-point scale what they liked most about the program (see Table 2).

Many of the students undertaking the VCAL have experienced some level of disengagement from schooling and may have been considered at risk of leaving school early. Applied learning in the VCAL has therefore become a very significant factor in re-engaging these young people in schooling through its emphasis on a hands-on approach to learning and

a conception of education that goes beyond the more traditional school classroom. The extent to which this is the case is also reflected in the steadily increasing percentages of eligible students who successfully completed a VCAL certificate since 2004 (see Table 3).

Finally, current national data indicate steady improvement in the Year 12 (or equivalent) completion rates, with an increase from 81.8% in 2000 to 88.7% in 2008 (in Victoria). These figures have been sourced from the Australian Bureau of Statistics (ABS, 2009) and summarized in Table 4. Australia's average completion rate for all states is 84.2% (see Table 5). Victoria is therefore making progress towards the 90% target, and the VCAL has become a significant strategy for achieving this goal, along with a range of recently announced reforms that now guarantee a training place for all 15 to 19 year olds and 20 to 24 year olds who are up-skilling.

Table 2: Students' rating of different aspects of the VCAL program

In relation to your VCAL program, which aspects of your study did you like the most? (N= 1907)	Agree		
	% Strongly agree	% Agree	% Total agree
Workplace experience	48.0	43.9	91.8
The opportunity to do Vocational Education and Training (VET) subjects	35.4	52.4	87.8
The hands-on approach to learning	56.8	39.4	96.2
The opportunity to complete your studies at your own pace	46.7	47.1	93.8

Table 3: Completion rates by gender for VCAL units and completion rates for students eligible to receive a VCAL certificate

Year	Satisfactory completion of VCAL units (males)	Satisfactory completion of VCAL units (females)	Total satisfactory completion of VCAL units (males and females)	Percentages of eligible students who completed a VCAL certificate at any level
2004	No data available	No data available	70.5%	58.7%
2005	73.7%	72.2%	73.1%	63.8%
2006	81.0%	79.7%	80.6%	68.7%
2007	79.2%	77.7%	78.7%	69.4%
2008	78.4%	78.5%	78.4%	70.0%

INTERNATIONAL GROWTH IN SCHOOL-BASED APPLIED LEARNING

The significant potential for applied learning to underpin a senior high school qualification has also been recognized in other countries, including the United Kingdom, where the new applied learning “Diploma” qualification was recently introduced in schools (Qualifications and Curriculum Development Agency, 2009). This qualification also targets 14 to 19 year old students and, like the VCAL, it represents a new vision in senior secondary schooling that adopts applied learning as the cornerstone of its pedagogical foundations.

Motivation and achievement are increased when tasks have purposes that are relevant to the individual and ‘real-world’ contexts, including the workplace, and when learners are actively involved, and supported, in shaping their learning experience... The collaborative nature of Diploma delivery is intended to secure a coherent experience for the learner that spans school, college, community and workplace environments. The emphasis is not only on the development of knowledge, but on the ability to apply that knowledge purposefully to various contexts related to real-world situations such as workplaces. By participating in a ‘community of practice’ associated with a particular sector or subject, learners gain experiences of different activities and groups, and develop the attitudes, as well as knowledge and skills, which are a precondition for progression. (Qualifications and Curriculum Authority, 2008, pp. 2-4)

Table 4: Percentage of persons aged 20-24 who have completed Year 12 or equivalent in Victoria, Australia

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
Percentage of persons aged 20-24 who have completed Year 12 or equivalent	81.8%	82.1%	82.8%	84.9%	84.7%	83.9%	85.5%	86.1%	88.7%

Table 5: Percentage of persons aged 20-24 who have completed Year 12 or equivalent in 2008 for all states and territories of Australia

State/ Territory	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Northern Territory	Australian Capital Territory	Australia (average)
Percentage of persons aged 20-24 who have completed Year 12 or equivalent for 2008	83.4%	88.7%	84.3%	82.1%	80.0%	72.0%	64.9%	90.4%	84.2%

The growing international interest in applied learning programs for senior high school students also extends to China and other countries in the Middle East and Southeast Asia. In the United Arab Emirates (UAE), for example, an applied learning program based on the VCAL has been introduced for senior high school students as a strategy to improve students' engagement in learning and to address identified skill shortages anticipated in that region of the world. It is apparent that applied learning is increasingly valued in high schools for its intrinsic capacity to engage young people in authentic learning and meaningful social integration, while also contributing to a nation's economic growth.

CASE EXAMPLES OF APPLIED LEARNING IN THE VCAL

The following cases provide examples of specific VCAL programs that have been undertaken by students in Victorian secondary schools. The cases have been selected because they demonstrate the use of effective applied learning projects which have been used by students and teachers to complete the requirements of the different strands of the VCAL. They also demonstrate how far applied learning extends across a range of learning contexts in the community.

Applied learning in the VCAL shares many of the pedagogical traditions of experiential learning (Beard & Wilson, 2006; Dewey, 1938; Kolb, 1984; Luckner & Nadler, 1997) which have been blended with the principles of adult learning (Knowles, 1990; Mezirow, 1991) and adapted for secondary school contexts. The applied learning that is fundamental to the VCAL program often requires students to assemble their VCAL from a variety of "hands-on" learning experiences derived from a diverse range of educational settings and community contexts. To complete applied learning projects VCAL students often cross organizational boundaries that have remained historically difficult to bridge in the community. These boundaries include the traditional divisions between schools as youth-based learning institutions, adult and vocational education institutions, workplaces, and community organizations.

In the case of John, for example, one of his applied learning projects involved the development of a Fire-Wise trailer to educate the local community about the risks of wild fire. Bush fire is a very significant issue for many Australian communities threatened by fire every summer. This very meaningful aspect of his applied learning was reflected in his motivation to undertake the project. John's applied learning project required him to complete traditionally adult-based Certificate II and III courses related to fire fighting, as well as working closely with his teachers from his school, the local Country Fire Authority (CFA) and the wider community.

Figure 2: VCAL Case 1, John and Country Fire Authority

"John" is 16 years old and is studying to complete his VCAL in a small town in regional Victoria. In addition to his study he is a volunteer fire fighter in his local community with the Victorian Country Fire Authority (CFA). To complete his VCAL John is blending study at school with the applied learning included in his accredited wild-fire training offered by the CFA, and his work in the local community advising residents how to protect their home from a fire.

His involvement in protecting the local community from bush fires not only makes a valuable contribution to the community but also allows him to complete his VCAL by drawing on meaningful applied learning activities linked to Australia's National Training Packages. Examples of applied learning activities that John undertakes to assemble his VCAL from the different strands include: Certificate II in Fire-fighter Operations; Certificate II/III in Public Safety (Fire-fighting Operations); Certificates for Occupational Health and Safety; Level II First Aid Training; organizing media coverage and public presentations to the community; initiating, planning and implementing fundraising activities for a "Fire-Wise" trailer to be used to educate the local community about managing the risks of bush fire.

The combination of these applied learning activities allows John to complete key elements of his VCAL strands. Much of his learning undertaken for the normally adult-based Certificate II and III courses allow John to meet the Industry Specific Skills and Work Related Skills strands, while his community service role contributing to the education of the local community about bush fire contributes to his Personal Development Skills and Literacy and Numeracy Skills strands.

Industry Specific Skills Strand	Work Related Skills Strand	Literacy and Numeracy Skills Strand	Personal Development Skills Strand
Adult-based certificate courses in fire-fighting	Work-based learning in fire-fighting with the CFA	Authentic publications developed for media and local community presentations	Plan and conduct fund-raising activities for the development of 'Fire-Wise' Trailer to be used to educate the local community about bush fire.

John's applied learning project therefore required him to work across the traditional boundaries between secondary schools, adult learning environments, community service organizations (CFA) and workplaces. John's experience of applied learning involved his personalized integration of service-learning, work-based learning, and more traditional school-based learning as well. The flexible framework for the VCAL allowed John to actively construct and demonstrate his knowledge and skills related to each of the different strands by using his applied learning project. The transferable nature of his acquired knowledge and skills was also demonstrated by John's ability to work competently in each of the different contexts that were used to assemble his applied learning project. The knowledge and skills that emerged from John's applied learning project were truly multidisciplinary and had a very clear connection to his real world.

The case of the River-Connect project also demonstrates the unique nature of applied learning in the VCAL. Like John, the 26 students from

Figure 3: VCAL Case 2, Notre Dame College and the River-Connect Project

Notre Dame College, a Catholic secondary school in regional Victoria combined with the Goulburn Broken Catchment Management Authority, The Greater Shepparton City Council, Department of Primary Industries, Parks Victoria, Goulburn Murray Landcare Network, and Goulburn Valley Water to undertake an innovative conservation program known as the River-Connect project.

The River-Connect project was part of a larger plan, developed by these local government and community agencies, to revitalize Reedy Swamp on the Goulburn River in the heart of the City of Shepparton. Twenty-six VCAL students and two teachers worked closely with the local government and community agencies involved in the project to develop an innovative VCAL Personal Development Skills unit. The project enabled the objectives of the River-Connect project and the outcomes for the VCAL students to be simultaneously met.

The VCAL students worked closely with the government and community agencies to undertake systematic audits and surveys at Reedy Swamp. These were done using GPS technology and were used to assess the infestation of noxious weeds such as arrowhead and willows, the growth of red gum seedlings in the swamp and the giant rush that is used by water birds for breeding. The students were also involved in rubbish clean ups, poisoning willows and the planting of native trees in culturally significant areas of the sand dunes at Reedy Swamp.

This program won a 2007 VCAL Achievement Award in the category of VCAL Partnerships. The school was also invited to present at the 9th International Partnership Conference: *Interpreting the Present to Influence the Future* in Helsinki, Finland. The VCAL program, involving the seven partners, received an honorable mention in the Global Awards presented at the conference.

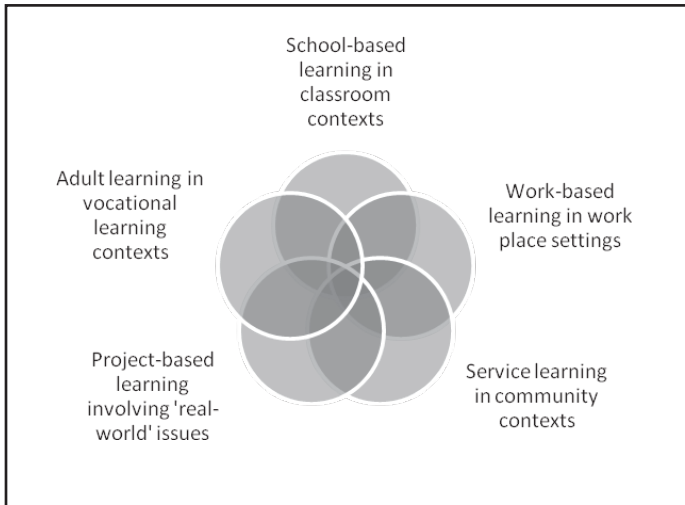
Industry Specific Skills Strand	Work Related Skills Strand	Literacy and Numeracy Skill Strand	Personal Development Skills Strand
Adult-based VET certificate courses in volunteering and conservation and land management	Work-based learning in conservation activities (e.g., tree planting, removal of noxious weeds)	Researching and writing about the impact of noxious weeds in Australia (literacy) Presentation to community groups on activities to restore Reedy Swamp (literacy) Mapping of the distribution of noxious weeds in Reedy Swamp (numeracy)	Restoration of Reedy Swamp utilizing community engagement and community service

Notre Dame College who participated in the River-Connect project were required to assemble their applied learning by drawing on a meaningful project and a range of rich learning contexts that are rarely brought together for secondary school students. Applied learning for the River-Connect project involved students crossing the organizational boundaries between their school, local government, environmental agencies, and the wider community. In the process students blended their school learning with service-learning, adult learning and work-based learning. The students' service-learning contributed to meeting all of the learning outcomes for the Personal Development Skills (PDS) strand of the VCAL, which was ultimately assessed through the students' demonstra-

tion of them in an authentic context. The blending of the different types or modes of learning in the VCAL can be represented by Figure 4 below.

A key feature of the applied learning essential to the VCAL is the use of “real-world” projects that allow students to become actively involved in constructing new knowledge and skills which are given meaning and purpose by the context of their application. This process usually takes the students beyond the school gates and, as demonstrated in the two case studies, applied learning projects in the VCAL require students to cross institutional boundaries and to personally assemble their learning from a range of different learning contexts. This feature of applied learning in the VCAL means that students are also likely to be confronted by the differing assumptions about learning that are held in each of these settings. In workplaces, for example, the students are likely to experience value being placed on practical forms of knowledge and skills that have very specific contexts of application. Fire-fighting and improving the environmental management of the local swamp are examples of such contexts from the case studies above.

Figure 4: Blended Nature of Applied Learning in the VCAL



Such knowledge and skills are best acquired and demonstrated in the context of their application and less likely to be measured in an abstract setting. The students’ process of learning such knowledge and skills involves working with people whose core business is not education but who still have a significant investment in learning. Such people include the teams of fire fighters who worked with John, and whose community of minds and bodies represent the “library” of knowledge and skill to be learned by him. In this setting VCAL students are likely to discern

that the “best” forms of learning are highly situated and that “valuable” knowledge often resides in teams or communities of people. Assessment of the knowledge and skill acquired by the students is therefore associated with the students’ contribution to the community and evidence of its impact on the community.

Students are likely to experience different messages about what types of knowledge and skills are “most valuable” in secondary school settings (Blake, 2007). In this highly controlled educational context greater emphasis is placed on knowledge and skills that are generalizable, can be abstracted from the contexts of application, and then taught and measured in a classroom situation. Such knowledge is also likely to be located in books or the minds of educational experts. The process of learning in a traditional secondary school setting and associated with the completion of a more conventional senior school certificate, may therefore typically be represented by the transmission of abstract information from the minds and books of teachers into the minds of students. In this situation students are likely to experience “valued” learning as being the acquisition and storage of generalizable forms of knowledge in their individual minds. Assessment is usually focused on the student’s capacity to reproduce the knowledge under exam conditions. There is clearly the potential for VCAL students to receive conflicting messages about learning and valuable forms of knowledge as they move between the different learning contexts for the VCAL.

IMPLICATIONS FOR EDUCATING TEACHERS IN HIGHER EDUCATION

The applied learning process in the VCAL requires of teachers new types of knowledge and skills that are responsive to the process by which their students cross boundaries to assemble their different modes of learning. Such pedagogical knowledge and skills exist in addition to teachers’ knowledge of their subject disciplines and share similarities with effective project management, including: (1) an ability to identify and link current community issues that are likely to be highly relevant to senior secondary school students and useful sources of meaningful applied learning projects; (2) an ability to develop and sustain creative partnerships between schools and other organizations in the wider community who also have an interest in learning (such organizations include adult learning institutions, workplaces, and community service organizations); (3) a broad conception of learning and deep appreciation of the different types of learning that students are likely to encounter as they become actively involved in their applied learning projects and cross institutional boundaries in the community; (4) an ability to assist students as they synchronize and assemble their own personalized experi-

ences of multi-disciplinary learning from each of the different settings involved in an applied learning project; (5) an ability to assess students' knowledge, skills and competencies related to applied learning and assist students' continual development in this regard; (6) a capacity to synchronize students' assessment in applied learning projects by accessing and evaluating information about the students' contributions to the learning contexts and communities beyond school; and (7) an ability to build effective relationships with senior school students that reflect the principles of adult learning and their status as young adults while maintaining the appropriate "duty of care" expected of a school teacher.

Ultimately VCAL teachers are required to overcome many of the dichotomous divisions that have tended to dominate education institutions, resulting in the transmissive approaches that are often associated with senior schooling and the many reasons students give for wanting to leave school early. Applied learning projects in the VCAL require teachers to value learning that encourages greater links between: "learning with hands and learning with the mind"; learning as individuals and learning as teams and communities; propositional knowledge that can be learned from books and tacit knowledge that is acquired through situated "hands-on" experiences.

THE GRADUATE DIPLOMA OF EDUCATION (APPLIED LEARNING)

In 2005 Deakin University established the Graduate Diploma of Education (Applied Learning) in response to the rapidly increasing demand for pedagogical knowledge and skills required to support the expansion of applied learning in secondary schools. The most immediate challenge for the course developers was the use of applied learning in higher education to prepare teachers for applied learning in secondary schools. The immediate risk for course developers was that fiscal constraints in higher education would typically pressure delivery of a course on applied learning into the seemingly cost effective use of weekly lectures and tutorials. This mode of delivery would have been epistemologically inconsistent with the applied learning content of the course, which cannot all be reduced to a series of lectures. The course developers were, in fact, facing many of the same pedagogical challenges being faced by VCAL teachers.

The course team developed a very strong relationship with the Geelong region's Local Learning and Employment Network (LLEN), an organization funded by the Victorian State government to build effective local community partnerships designed to better understand and improve pathways and transitions for young people in the region. There is a diverse range of community partners included as members of the

Table 6: Learning and Employment Organizations

Learning and Employment Organizations	Potential contribution for applied learning in teacher education
Secondary Schools (Government, Catholic, and Independent) Technical and Further Education Institutions (TAFE) Adult and Community Education (ACE) organizations	Contexts for the Graduate Diploma of Education (Applied Learning) teacher-education students to complete their own work-based learning and service-learning to better understand the current contexts in which young people are learning. Source of different communities of professional practice to facilitate grounded development of students' understanding about young people and applied learning in different "formal" learning contexts.
Victorian Curriculum and Assessment Authority Department of Education, Employment and Early Childhood (DEECD)	Important source of knowledge and information about current developments in applied learning in schools and other youth education settings.
Local government and community organizations	Provide important contexts for teacher education students to become involved in local community issues relevant to young people and to complete service-learning oriented towards youth engagement in learning.
Employers and industry reference groups	A context for teacher education students to better understand work-based learning in workplace settings, and consequently the significance of work-based learning for students in the VCAL.

regional LLEN (see Table 6), meaning that the course team had access to many organizations within the community that would allow the development of substantial components of work-based and service-learning in the course. Much of the course development occurred from consultation between the Deakin University team and members of the LLEN, resulting in a program that could be grounded in many of the important local issues affecting young people.

The team decided that a "mixed-mode" approach to the course would be the best strategy to balance the need for face-to-face lectures and workshops with the applied learning dimensions of the Graduate Diploma of Education (Applied Learning). Mixed-mode is also described as a form of "blended learning" (Hicks, Reid, & George, 2001) that utilizes face-to-face teaching with other modes of learning, typically including on-line learning technologies. The Graduate Diploma of Education (Applied Learning) was developed using four different modes of learning that would provide the higher education students with a combination of learning experiences and contexts that would also demonstrate congruence with applied learning in the VCAL. The four different modes of learning are: intensive face-to-face workshops delivered at the university and in school/industry-based contexts; on-line learning (off-campus); work-based learning undertaken in schools, TAFEs or ACE; and service-learning contributing value to community-based initiatives that are oriented towards improving youth engagement in education and training (see Table 7).

Each of the five intensive teaching blocks in the Graduate Diploma of Education (Applied Learning) runs for two weeks duration and occur as: Summer School; Autumn School; Winter School; Spring School; and a final one week block undertaken in November. The work-based learning mode in the program is completed as blocks of professional experience placements undertaken in schools, TAFEs, or ACE settings and during the periods between the intensives, providing a total of 45 days

Table 7: Summary of Mixed-Mode Learning in the Graduate Diploma of Education (Applied Learning)

Mode of Learning	Graduate Diploma of Education (Applied Learning)
Face-to-face	Five intensive <i>on-campus</i> teaching blocks conducted for two weeks at a time in February (Summer School), April (Autumn School), July (Winter School), September (Spring School) and November (Final block).
On-line	Students participate in <i>on-line</i> study using 'Blackboard' while they are " <i>off-campus</i> " in between study blocks and during their work-based learning placements
Work-based Learning	Students complete 45 days of <i>work-based learning</i> under the supervision of a suitably qualified mentor in secondary schools, TAFE institutions, and ACE settings.
Service-learning	Students undertake 15 days of negotiated <i>service-learning</i> requiring them to add value to their service-learning context. These days can be completed as small blocks of three and four days at a time or as a commitment to one more significant community initiative/project, depending on the nature of the activity.

professional experience for the year. The 15 days of service-learning can be completed by students at any time throughout the course, with many students electing to complete most of their service-learning by supporting initiatives and programs in the local community that benefit from their prior industry knowledge and skills. Finally, the on-line learning elements commence immediately after the first intensive is completed in February and continue to be undertaken by students in the periods between the intensive face-to-face study blocks. The on-line mode of delivery allows the students to continue to draw from and contribute to the course's community of learners during the periods off-campus.

The sequence of the eight curriculum units for the Graduate Diploma of Education (Applied Learning) is intended to cater to students' developing knowledge and skills as they progress through the course, as well as to synchronize their need to learn new content that will both support and utilize their work-based and service-learning projects. The students are encouraged to become actively involved in authentic school-based applied learning projects as key dimensions of their work-based learning and service-learning. Although each of the eight units has its own discrete study design and "learning folder" on the Deakin Studies On-line (DSO) Blackboard web-site, the course team deliberately attempts to integrate the content and assessment of units as much as possible, particularly during the face-to-face teaching sessions. The intended aim of this strategy is to emphasize the students' whole course experience

and to avoid the perception that any of the course units are overly discrete and unrelated to the others.

In 2008 a pilot study (Blake & Nolan, 2008) was conducted to investigate the higher education students' response to blending the four different modes of learning being used in the Graduate Diploma of Education (Applied Learning) and the Bachelor of Early Childhood Education offered at Deakin University. In particular, significant numbers of the 41 students who participated in the research either agreed or strongly agreed (78%) that using the mixed-mode learning allows greater balance between learning theory and practice. Additionally, a significant proportion of the students either agreed or strongly agreed (81%) that the knowledge and skills they learned through mixed-mode delivery was easily transferable between the different modes.

CONTINUING CHALLENGES FOR THE VCAL AND PREPARATION OF "NEW" TEACHERS

Many of the challenges facing the VCAL reflect challenges associated with its rapid growth and success over the last eight years. These challenges also affect the delivery of the Graduate Diploma of Education (Applied Learning) and include:

- The challenge to broaden many secondary teachers' conception of learning and how learning can be assessed. In particular, the need to correct the view held in some secondary schools that applied and vocational learning is a "second class" way of learning only offered to "at-risk" students as a form of "therapy." This view is inconsistent with the use of applied learning in higher education, where it is more likely to be valued as best practice (Wolff & Tinney, 2006) and a strategy to improve graduation rates. The "applied-learning-as-therapy" view held by some secondary school teachers fails to recognize how more transmissive approaches to teaching contribute to many young people's early departure from school (Blake, 2004, 2006).
- The challenge to meet the growing demand for applied learning teachers in response to the increasing demand for the VCAL to be delivered in the diverse range of youth learning locations, including secondary schools, TAFEs, and ACE organizations. Simultaneously, the demand for these teachers is reflected in the need for experienced teachers who can add value to the work-based learning and service-learning arrangements required by the pre-service teachers in the Graduate Diploma of Education (Applied Learning).

- The challenge to be creative in the synchronization of the different modes of applied learning essential to both the VCAL and the Graduate Diploma of Education (Applied Learning). This includes using highly effective applied learning projects that will encourage the contextualized development of transferable knowledge and skills.
- The challenge to equip teachers with the capacity to facilitate high-value applied learning partnerships between schools, universities, VET providers, employers, and members of the wider community.
- The challenge for the VCAL to be responsive to the rapidly contracting youth employment market created by the current economic climate, and the need to diversify post-school study options for VCAL graduates. This also includes recognizing the potential for the VCAL to be a pathway of choice for students affected by social disadvantage as well as students who simply prefer applied learning.

CONCLUSION

The Victorian Certificate of Applied Learning was created in Victoria, Australia as a response to increasing participation rates in senior secondary schooling throughout the 1990s and early 2000s. The program is offered as a “hands-on” alternative to the more traditional Victorian Certificate of Education and has enjoyed strong enrollment growth since its introduction in 2002. It is now understood to play an important role in the achievement of youth education policy targeting 90% completion of Year 12 or its equivalent. The VCAL has emerged in a policy context linking education to economic growth and a growing awareness of the personal, social, and economic risks created by young people leaving school early.

Applied learning in the VCAL utilizes community-oriented projects to achieve a unique blend of work-based learning, service-learning, school-based learning, and adult learning. Students are encouraged to use their “hands-on” projects to personally assemble their learning across a diverse range of authentic learning contexts. This represents a significant shift in thinking for secondary schools, where transmissive approaches to teaching have tended to dominate the senior secondary curriculum since the earlier years of lower Year 12 completion rates.

The VCAL has also created the need to re-think how applied learning can be used in higher education to better prepare pre-service teachers. This article has profiled the mixed-mode approach offered to students in Deakin University’s Graduate Diploma of Education (Applied Learning). This model also emphasizes the use of applied learning projects

and attempts to achieve best practice by blending the use of intensive face-to-face workshops with elements of work-based learning, service-learning, and on-line learning undertaken when students are off-campus.

GLOSSARY

Adult and Community Education (ACE): A community based organization that may be a registered training organization and/or an authorized VCE or VCAL provider.

Department of Education Employment and Early Childhood (DEECD): A Victorian Government department responsible for learning, development, health and well-being of all young Victorians from birth to adulthood.

Local Learning and Employment Networks (LLEN): Community networks established across Victoria to support young people's connections with local education and training organizations, employers, and community groups.

Middle years of schooling: Students who are in the fifth to ninth year of schooling.

National Training Packages: National training packages are the foundation of Australia's national training system. They are flexible training products designed and developed by Australian industry to support training pathways in current and emerging vocational skill needs. All training packages incorporate national units of competency, assessment guidelines, and national qualifications.

Post-compulsory years of schooling: Schooling that is completed after students have reached the minimum school leaving age. This age is typically 16 to 17 in Australian states.

Secondary schools: Schools that provide education from Year 7 to Year 12. Secondary schools are also frequently referred to as high schools or secondary colleges.

Senior school students: Students who are completing the last two years of their secondary schooling. These senior years are often referred to as Year 11 and Year 12.

Strands: The VCAL contains four curriculum strands: literacy and numeracy skills, industry specific skills, work related skills and personal development skills.

Structured workplace learning placement: Structured workplace learning is on-the-job training during which a student is expected to master a set of skills or competencies, related to a course accredited by the Victorian Registration and Qualifications Authority (VRQA).

Technical and Further Education: Publicly funded and adult-oriented training organizations which provide a range of technical and vocational education and training courses and other programs.

Victorian Certificate of Applied learning (VCAL): An accredited senior secondary school qualification undertaken by students in Years 11 and 12.

Victorian Certificate of Education (VCE): The VCE is a senior secondary qualification that is designed to be completed in Years 11 and 12.

Victorian Curriculum and Assessment Authority (VCAA): A statutory authority that provides high quality curriculum and assessment programs for Victorian students.

Vocational Education and Training (VET): Nationally recognized vocational certificate. This certificate may be integrated within a VCE or VCAL program.

REFERENCES

- Access Economics (2005). *The economic benefit of increased participation in education and training*. Sydney: Dusseldorp Skills Forum.
- Applied Economics (2002). *Young persons' education, training and employment outcomes with special reference to early school leavers: A report prepared for the Business Council of Australia and Dusseldorp Skills Forum*. Retrieved January 22, 2009, from <http://www.dsf.org.au/papers/151.htm>
- Aron, L. (2006). *An overview of alternative education*: Report prepared by The Urban Institute for the National Center on Education and the Economy, U.S. Department of Labor, Employment and Training Administration.
- Australian Bureau of Statistics (2007). *Schools, Australia* (No. 4221.0). Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics (2009). *Australian social trends – education and training (No 4102.0)*. Canberra: Australian Bureau of Statistics.
- Beard, C., & Wilson, J. (2006). *Experiential learning: A best practice handbook for educators and trainers* (2nd ed.). London; Philadelphia: Kogan Page.
- Billett, S., & Seddon, T. (2004). Building community through social partnerships around vocational education and training. *Journal of Vocational Education and Training*, 56(1), 51-67.
- Blake, D. (2004). *From risk to relationship: Redefining pedagogy through applied learning reform*. Deakin University, Geelong.
- Blake, D. (2006, July). *Re-engaging young people through applied learning pedagogy*. Paper presented at Making teaching public: Reforms in teacher education. Proceeding of the 34th Annual Conference, Fremantle, Western Australia.
- Blake, D. (2007). Exploring the challenge of applied learning reform. *International Journal of Pedagogies and Learning*, 3(3), 58-76.
- Blake, D., & Nolan, A. (2008, Nov.-Dec.). *Establishing a tool to investigate how and why students engage in mixed-mode learning in higher education*. Paper presented at the Australian Association for Research in Education, Brisbane, Australia.
- Chapman, B., Weatherburn, D., Kapuscinski, C. A., Chilvers, M., & Roussel, S. (2002). Unemployment duration, schooling, and property crime. *NSW Crime and Justice Bulletin*, 74.
- Considine, M. (2006, Sept.). *The power of partnership: States and solidarities in the global era*. Paper presented at the Governments and communities in partnership conference, University of Melbourne.
- Dewey, J. (1938). *Experience and education*. New York: Collier Macmillan.

- DSF (2006). *How young people are faring 2006: Key indicators*. Retrieved June 20, 2007, from <http://www.dsf.org.au/papers/192.htm>
- Henry, J., & Grundy, S. (2003). *Blurring the boundaries in education: Towards a more seamless system of post-compulsory education*. Geelong: Faculty of Education, Deakin University.
- Hicks, M., Reid, I., & George, R. (2001). Enhancing on-line teaching: Designing responsive learning environments. *The International Journal of Academic Development*, 6(2), 143-151.
- Kirby, P. (2000). *Ministerial review of post compulsory education and training pathways in Victoria. Final report*. Melbourne: Department of Education, Employment and Training Victoria.
- Knowles, M. (1990). *The adult learner: A neglected species* (4th ed.). Houston: Gulf Publishing Company.
- Kolb, D. (1984). *Experiential learning: Experience as the source of learning and development*. New Jersey: Prentice-Hall.
- Kosky, L. (2002). *Improved educational outcomes: A better reporting and accountability system for schools*. Melbourne: Communications Division of the Department of Education and Training, State of Victoria.
- Lamb, S., & Rice, S. (2008). *Effective strategies to increase school completion report: Report to the Victorian Department of Education and Early Childhood Development*. Melbourne: Department of Education and Early Childhood Development.
- Luckner, J., & Nadler, R. (1997). *Processing the experience: Strategies to enhance and generalize learning*. Dubuque, IA: Kendall/Hunt.
- MCEETYA (2004). *National data on participation in VET in school programs & school-based new apprenticeships for the 2004 school year*. Retrieved 20 July 2007, from http://www.mceetya.edu.au/verve/_resources/vetdata2004.pdf
- Mezirow, J. (1991). *Transformative dimensions of adult learning*. San Francisco: Jossey Bass.
- OECD (2001). *Local partnerships for better governance*. Paris: Organisation for Economic Co-operation and Development.
- OECD (2007). *Economic policy reforms: Going for growth 2007. Chapter 2 country notes*. Paris: Organisation for Economic Co-operation and Development.
- OECD (2008). *Education at a Glance 2008: OECD indicators*. Paris: Organisation for Economic Co-operation and Development.
- Qualifications and Curriculum Authority (2008). *The diploma and its pedagogy*. Retrieved July 23, 2009, from http://www.qcda.gov.uk/libraryAssets/media/The_Diploma_and_its_pedagogy.pdf
- Qualifications and Curriculum Development Agency (2009). *The diploma*. Retrieved July 23, 2009, from <http://www.qcda.gov.uk/5396.aspx>
- Teese, R., Clarke, K., & Polesel, J. (2007). *The on track survey 2007 statewide report: The destinations of school leavers in Victoria*. Melbourne: Department of Education and Early Childhood Development.
- UNESCO (2008). *Education for all (EFA) international coordination*. Retrieved July, 2008, from http://portal.unesco.org/education/en/ev.php-URL_ID=46881&URL_DO=DO_TOPIC&URL_SECTION=201.html
- Victorian Curriculum and Assessment Authority (2006). *Applied learning*. Retrieved June 2, 2007, from http://www.vcaa.vic.edu.au/vcal/Publications/Information_Sheets/VCALinfoapplearn.pdf
- Victorian Curriculum and Assessment Authority (2009). *Enrolments in the Victorian Certificate of Applied Learning*. Melbourne, Australia: Data Analysis and Reporting Unit of the Victorian Curriculum and Assessment Authority.

- Wolff, M., & Tinney, S. (2006, May). *Applied learning as a best practice model: A strategy for higher education success*. Paper presented at the Association of Institutional Research National Conference, Chicago.
- Woods, D. (2007). *The role of VET in helping young people's transition into work: At a glance*. Adelaide, South Australia: NCVER.