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PARALLEL TAFE AND HIGHER EDUCATION STUDIES IN CONSTRUCTION MANAGEMENT: FROM COLLABORATION TO DUAL QUALIFICATIONS

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ABSTRACT

Collaboration between TAFE (vocational colleges) and universities in Australia in construction management has been problematic, with exchanges between the two sectors limited to linear articulation and prescribed credit transfer. Articulation pathways have traditionally been viewed as the poor relation of university entry. In 2005, the first pilot project in dual sector construction education was conducted at RMIT University in Melbourne. Higher education students completed electives in practical units within the TAFE sector. Due to the overwhelming success of the project, practical electives were firmly embedded in the construction management programme in 2007 and this paper reports on the third, final phase of the project in 2009 which has seen construction management students graduate with a dual qualification – both a TAFE qualification and a Higher Education degree. The case studies of this final phase reveal that students and industry want the benefits of a practical qualification. The data raises critical questions about education pathways and suggests long-term implications for construction and dual sector education in Australia.

Keywords: dual-sector education, TAFE, VET, construction management, pathways.
INTRODUCTION

Australia, like many other nations, has a distinct divide in post-secondary education between Vocational Education (TAFE) and Higher Education (University). As Garrod and MacFarlane (2009) note, the terms for post-secondary education change from country to country but the further-higher distinction is normally a pyramid of institutions with universities at the apex. Within Australia the changing needs of a global, knowledge-based economy has seen an age of mass participation in post-secondary education. Universities as a result have expanded their offerings to match the demands of their clients, workplaces and evolving industries. A modern economy needs graduates who are able to blend academic knowledge with the skills and attributes required by employers. The integration of knowledge, which has traditionally been the province of universities, with skills, traditionally the province of vocational education, has reshaped thinking about post-secondary education (Gallagher, 2009).

There has been a “blurring” at the edges of the offerings of both universities and vocational education providers. This blurring of the edges has occurred in spite of differences in how the sectors fund, report, teach and accredit programmes and students (Wheelahan & Moodie, 2005). In reality, social and economic change is forcing new collaborative models of vocational and higher education (HE).

The Bradley Review of Higher Education (2008) has demanded a more holistic approach to the provision of tertiary education. The review has recommended a single level of governance of what has traditionally been two sectors of tertiary education. This “continuum of tertiary skills provision” (p.16) calls for a more coherent approach utilising the advantages of both the vocational and HE sectors. Kemp (1999) notes that government policy for much of the last decade of the century was focussed upon “lifelong learning”. The new model of post-secondary education proposed by Bradley (2008) builds upon this lifelong learning model, seeing both sectors as able to contribute to a continuum of learning that matches industry and individual needs into the future.
The next section examines some of the issues involved in the development of collaborative models and some of the barriers to vocational education and training (VET) and higher education (HE) sustained collaboration.

COLLABORATION ACROSS THE SECTORS

Models of collaboration between VET (TAFE) and HE (University) are not new in Australia. Articulation, dual awards, credit transfer arrangements, TAFE-University guaranteed pathways, nested awards and collaborative curriculum partnerships have all existed for some time in Australia (Doughney, 2000). In addition to providing multiple exit and entry points, these models have all sought to address the gulf between the vocational (TAFE) sector and the university (HE) sector. The more traditional models of “dual sector” education have focussed upon credit transfer and articulation of previous courses or qualifications, particularly those obtained in the vocational or technical education sector (Ross, 2006; Wheelahan & Beven, 2006; Young, 2005). According to MacKenzie (2006) it is frequently suggested that credit transfer and articulation arrangements broaden students’ study pathways and encourage “higher educational attainment” (p.17). However, such models are weighted heavily towards a “time served” approach to learning, where credit or exemptions for existing qualifications are translated into reduced contact hours in higher education studies. Doughney (2000) underlines this point when noting that “standardised learning pathways are usually based on sequential movement from one course to the next” (p.63). These models assume a progression of qualifications, commencing with a technical qualification and progressing onto a higher education or university qualification. The underlying assumption is one of progressive time-served qualifications, rather than a model focussing exclusively upon learning and learner behaviour. Construction management education has been a very good example of linear articulation in Australia, with all Australian universities providing credit transfer for prior VET/TAFE qualifications in construction.

Another key issue in sustained collaboration has been the historical perception of what each sector can provide. TAFE in Australia is designated as a provider within a vocational education and training sector (VET) that has the primary
purpose of education of post-secondary students with skills for work. Curriculum in TAFE must be based on competency-based training packages. Wheelahan (2009) notes that this contributes to the marginalisation of TAFE education and credentials. Garrod and Warr (2009) highlight the fact that VET and HE are designed for very different markets and historically progression between the two has not been a priority. If collaboration has occurred it has been to allow progression through the two sectors – traditionally seen as an “upward” movement from a TAFE/VET qualification to a HE qualification (Harris, Rainey & Sumner, 2006). Yet articulation and the acquisition of skills and knowledge does not occur in a linear, single-file manner alone – as industry and individual needs change the movement between TAFE/VET and HE also operates in reverse. Bradley (2008) highlights the explosive expansion in HE to TAFE movement of students in Australia and calls for changes in structural barriers such as funding and government regulations. It appears the individual students are dictating how they what to use both sectors of education – and when!

Another of the reasons it has been difficult to encourage greater continuing collaboration across the sectors has been the role and identity of staff within both sectors. Divisions between teaching and research have been reinforced through funding and employment practices of governments within the two sectors. But as Garrod and Macfarlane (2009) note, where the emphasis is placed on complementary development of curricular, the division is seen as irrelevant. These authors call for a shared culture that is built upon new understandings of learning. These new understandings require a new language where both sectors adopt an accepted definition of learning and scholarship. Bradley (2008) also emphasises the need for common terminology and common graded assessment across the two sectors, with strong pathways in both directions.

Employers are also demanding an integrated post-secondary environment where differences between the sectors do not restrict the capacity of individuals to move between them (Bradley, 2008). The demands of a changing, volatile construction industry are also emphasising a wider range of skills and knowledge delivered in an efficient time-frame (Curtis & Lucas, 2001). Changing work practices and skills mixes in the construction industry are creating an imperative for a more seamless
construction curriculum, combining experiential learning with theoretical frameworks in parallel.

This paper examines the three TAFE/HE collaborative projects in construction management education over a five year period at RMIT University, Melbourne, that worked towards achieving this seamless *parallel* curriculum of practical skills and theoretical knowledge with dual sector (TAFE/HE) qualifications being offered to all students.

THE CONSTRUCTION MANAGEMENT PROJECT 2005 – 2008:
BACKGROUND

In 2005/6 the School of Property, Construction and Project Management (PCPM) at RMIT was funded under the Learning and Teaching Investment Fund (LTIF) to examine the possibility of dual sector education in construction and to undertake a pilot project in this area. The project aims were:

- to provide students with industry relevant practical education and learning
- to develop a model for staff exchange and curriculum collaboration between HE and TAFE in construction
- to promote pathways for dual-sector qualifications

Changing work practices in construction were demanding greater breadth and depth of understanding of technical equipment and construction processes (Productivity Commission, 2000). Reliance upon narrow understandings of building processes was seen as not adequately equipping future students for the rigours of an ever changing international workplace. The construction industry skill/knowledge profile of graduates had changed. Industry sources and research quoted the need for “hands on” experience coupled with a higher education knowledge base (Curtis and Lucas, 2001).

Industry advice indicated there was an urgent need to develop curriculum in line with the knowledge and skill requirements of current and future labour markets. There was also a need to provide students with both academic and technical qualifications and various entry and exit points. This project allowed students to
tailor courses and qualifications to match their employment needs and their long-term construction careers.

The 2005/6 project targeted Building Services, one of the courses in the construction management program. The pilot project drew upon educational research indicating the importance of hands-on knowledge and first hand experience in the learning process (Smart & Csapo, 2007). Approaches were made to the TAFE School of Plumbing and Fire Protection and the School of Air-Conditioning and Refrigeration. These two schools were identified as containing curriculum that had practical modules matching the theoretical knowledge offered in the HE degree course. All 40 enrolled HE students in the Building Services course were given the opportunity to undertake two units in each of these TAFE schools. The curriculum was carefully selected by the teachers and HE staff to reflect learning needs and to “value-add” to the HE course.

The 40 students undertook the units over a full, intensive week of classes in TAFE, rotating between the teachers and buildings. At the completion of each TAFE unit, competency assessments were undertaken and student feedback data was obtained through surveys. The results of the 2005/6 pilot project were overwhelmingly positive. Students and staff were immensely satisfied with the learning opportunity (McLaughlin & Mills, 2009).

It appeared that students were able to transfer theory previously learnt. The experiential learning involved concrete, hands-on experiences, observation and reflection. Students in the 2005/6 pilot project indicated greater understanding of the theoretical components of building services as a result of undertaking the practical TAFE units.

Reviews of the 2005/6 project revealed that the success of the project, although outstanding and beyond expectations, was not sustainable in terms of project budgeting, staffing and resourcing.

All of the staff involved in 2005/6 were heavily committed to the vision of cross sector (dual) education and the value of the project, so in 2007, LTIF funding was again sought to create a more sustainable model of dual-sector education in construction.
In the 2007/8 pilot project, the School of PCPM and TAFE School of Plumbing and Fire Services jointly offered skills electives in a range of areas. Students could freely enrol into an elective in the TAFE School. HE students in the School of PCPM selected elective units from existing TAFE modules in the School of Plumbing and Fire Services to build a program of study leading to a TAFE statement of competency.

Over an intensive week of classes, 40 students again undertook modules drawn from the Certificate 3 and 4 programs. Students were required to complete competency assessments and undertake a reflective journal. The students enjoyed this learning experience and their reasons were connected to enhanced learning. Half the students surveyed indicated that the practical modules they had undertaken enhanced their understanding of the theoretical work they had done in their higher education course and over half felt better prepared and better able to understand what they had been learning (McLaughlin and Mills, 2009).

Evidence from these 2005/6 and 2007/8 projects indicated support for this type of learning approach.

The provision of cross-sector (TAFE/HE) skills electives in construction allowed flexibility of learning by enabling students to pursue areas of interest at the technical and vocational level and to develop skills in new areas that would enhance their changing work careers into the future. In 2008, the TAFE electives were embedded in the HE programme with course codes and became self-funding and a permanent feature of the HE degree.

**THE CONSTRUCTION MANAGEMENT PROJECT 2009 – 10: DUAL QUALIFICATIONS**

The HE construction students who were involved in the first two stages and pilots of the 2005/6 and 2007/8 project demonstrated by their comments on surveys and feedback to staff that dual sector education – the combination of vocational education skills and HE knowledge – resulted in enhanced learning and understanding of key concepts in construction education. As stand-alone elective
courses, the students had the opportunity to pursue practical TAFE electives that built upon their theoretical knowledge.

But the stand-alone electives did not enhance either the RMIT University mission of “seamless lifelong learning” or current policy thinking on lifelong learning (Bradley, 2008). In developing the dual sector construction electives, staff were emphasising the dual sector character of the university and developing opportunities to support these outcomes. There was a need to embed these electives and provide students with both a TAFE and HE qualification to take advantage of the “duality” of the university. Using credit transfer articulation agreements in reverse to the normal linear “upwards” progression of students from TAFE to HE, students in the 2009/10 pilot group were able to apply for a Diploma of Building through the TAFE department. Of the 24 students in the 2009/10 pilot group project, 16 were also eligible to apply to graduate with the Bachelor of Construction Management in 2010.

Wheelahan and Moodie (2005) and Phillips (2006) have all emphasised that pathways and student articulation (from TAFE to HE and HE to TAFE) are based upon the trust between the sectors. Coles and Oates (2005) call this “zones of mutual trust” – ZMT. They note that these articulation and credit transfer agreements often depend on voluntary participation and a process of consensus. The danger with the construction management project in 2007/8 was that it would disappear if personnel or staff that Wheelahan (2009) calls “boundary spanners” left either the TAFE or HE faculty, so the importance of a parallel qualification was significant. It was also important to utilise the credentialing opportunities that a dual sector university like RMIT can offer – especially in a future marketised tertiary education system. Although many dual sector awards are based upon a linear progression from TAFE to HE, what Lolwana (2005) calls a climbing frame, it was important to recognise this project not as articulation, but a collaborative, parallel effort between the sectors. In this project students could, by careful selection of TAFE construction electives, qualify for both a diploma and degree at the same time.

In 2010 the first pilot group of students who had decided to graduate with the Diploma of Building and the Bachelor of Construction Management were
interviewed as to the reasons they decided to seek a dual qualification through the elective project. The results of these interviews are detailed in Table 1 and 2.

Of a total of 24 students undertaking the pilot TAFE electives as part of their HE degree in 2009, 16 were eligible for both a Diploma of Building and a Bachelor of Construction Management at graduation in 2009. Of the 16 students, seven responded to questions about the project. They were asked to identify their reasons for graduating with dual qualifications and their comments upon the opportunity to access two awards during their four year HE degree. Graduates were asked to provide answers to the questions as to why they applied for the Diploma. Table 1 sets out their responses. Of the respondents, six wanted an additional qualification, four wanted recognition of their practical skills and seven felt it would aid their employment opportunities. Very few of the graduates felt that it would immediately affect their remuneration – although two felt it may help in the longer term.

The data indicated that the graduates were keen to amass an additional qualification. Their understanding of the importance of a mix of theoretical and practical skills in construction translated into their desire for qualifications that recognise this difference. Graduates commented that parallel qualifications gave them a competitive edge over other graduates who did not possess such qualifications. Several felt it would enable them to move between employment roles more smoothly and with greater opportunity. All of the graduates felt parallel qualifications were a “bonus” in the workplace and an “insurance” against labour market fluctuations. A small number of the graduates noted the opportunities dual sector qualifications gave them to interact with different “types” of people, with dual qualifications preparing them for work in different sectors of the construction industry. This appeared particularly important for those graduates who were unsure about which sector of the industry they wanted to work.

When asked to identify the major advantage of the dual qualifications, the breakdown of responses was:

- competitive advantage
- less fees/money saving
These responses reflect research supporting the integration of academic knowledge with practical skills (Leitch, 2006) and demonstrate that even early career graduates have a clear grasp of the requirements of modern workplaces and the necessity to obtain both skills and knowledge to successfully navigate such workplaces.

Of the graduates, 100% of those interviewed thought it was an advantage to undertake these qualifications concurrently. This question about concurrent qualifications was particularly important as previous provision of both TAFE/VET and HE qualifications has been mostly linear (Doughney, 2000). All of the students supported the integration of qualifications, so that both qualifications could be obtained in the original timeframe of one degree (four years). However, although the response was expected, the reasons given by the graduates did not necessarily reflect expediency but rather offered insights into the learning process they saw themselves undertaking.

One student commented:

“It is much easier to take elective courses while you are in ‘study mode’. It would be a lot harder to pick up additional study (like the Diploma) following graduation, as you are no longer in study/university mode.”

Another agreed that:

“It is a huge advantage if you work a little harder. The advantage is the Diploma.”

One student said:

“I have to do (HE) electives anyway, this way I get practical skills and a qualification.”

Graduates not only agreed that gaining parallel qualifications was efficient in time and cost, but their responses indicate they are far more receptive to studying
theoretical and practical qualifications in parallel – the learning “mode” is complementary.

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<th>Additional Qualification</th>
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<tr>
<td></td>
<td></td>
<td>- Competitive graduate edge</td>
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<td>- Bonus for studying at RMIT</td>
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<td></td>
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<td>- Practical and theoretical skills</td>
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<tr>
<td></td>
<td></td>
<td>- Greater understanding of trade skills</td>
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<td>- Understanding different roles, people</td>
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<td></td>
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<td>- Insurance against labour market fluctuations</td>
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<td></td>
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<td>- Work in different sectors of industry</td>
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| Greater Remuneration | 1 | |

Table 1 – Reasons for applying for both Diploma and Degree

<table>
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<td>- Less fees</td>
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<td>- Two qualifications</td>
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<td>- Time saving</td>
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| No Advantage | 0 | |

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<th>Competitive Advantage Over Other Graduates</th>
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<tr>
<td></td>
<td></td>
<td>- Greater scope of qualification</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Looks better on CV</td>
</tr>
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A010 – 11
Different Type of Staff | 2 | - TAFE staff one on one help  
| | | - TAFE staff more approachable  
Different Type of Work | 7 | - Practical, hands on  
| | | - Skills based  
Time Efficient | 4 | - At uni anyway  
| | | - Have to do electives

Table 2 – Advantages of Parallel Qualifications

The interview results of the dual sector graduates indicate full support for elective parallel qualifications in construction. Of course, the number of students eligible to apply for both awards was small in this pilot project and hence the data/results reported here is limited. However, the opportunity is now available for all construction and project management students at RMIT to obtain dual qualifications in construction and further research will reveal additional data for examination.

CONCLUSION

The three pilots (2005/6, 2007/8 and 2009/10) were part of an evolution in construction management pathways in Australia. The first pilot embedded TAFE construction units in the existing construction management HE classes with the aim of value adding practical demonstrations and activities to the learning experience. The second pilot in 2007/8 created stand-alone elective courses that built upon TAFE units of competency in building and services. These elective allowed HE construction management students that opportunity to pursue personal interests in practical construction skills. The third pilot in 2009/10 allowed HE construction management students to undertake planned TAFE electives that, upon successful completion, allowed them to apply for both a Diploma of Building and Bachelor of Construction Management upon graduation.
The HE construction students who were involved in the first two pilots demonstrated by their comments and feedback that dual sector education enhanced their learning and understanding of the key concepts in construction as well as building important workplace skills like teamwork and communication (McLaughlin & Mills, 2009). The challenge in the final pilot was to find a way to recognise these vocational experiences and experiential learning opportunities to maximise the time students spent at the university. By mapping the TAFE skill electives into the HE curriculum using RPL, students were able to gain dual qualifications in building and construction management. The pilot projects have demonstrated how what was traditionally a two sector (VET/TAFE and HE) approach to construction education can be organised, using the strengths of both sectors, to provide outstanding educational outcomes for students. As the tertiary education sectors in Australia come to terms with the political, social and economic imperatives of greater access and participation for the nation’s population (Bradley, 2008) this pathways project is both relevant and urgent.

Tertiary education in Australia is on the move! It is vital for the future social and economic well-being of all Australians that the challenges facing tertiary institutions attempting to “bridge the divide” between traditional sectors of VET (TAFE) and HE (university) be addressed. If tertiary education is to provide integrated responses to workforce needs, the close collaboration and equal recognition of qualifications and abilities of both sectors must be a priority. This research in construction management demonstrates it can be done.

REFERENCES


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