Achieving Diversity: Pathways may be the Solution!

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ABSTRACT
This paper examines the role of pathways in increasing the diversity of higher education student cohorts. The Commonwealth Government has as its higher education reform agenda the increased participation of under-represented groups to a 20% diversity target for Australian universities. Yet for many universities, reaching this target will require significant changes to entry and access conditions. This paper examines two case studies of construction education pathways and evaluates their effectiveness in addressing diversity using the DEMO matrix developed by the National Centre for Student Equity in Higher Education (NCSEHE). The first case study was based on a VET in Schools model that articulates school students into construction courses in TAFE and higher education. The second case study targets mature aged people who do not have formal qualifications in construction, but wish to participate in higher education. The results indicate that pathways into construction degrees can improve student equity ratios, but element such as learner engagement, confidence, resources and collaboration are critical features of successful pathways. These results have important implications for future decision making regarding university articulation models in light of higher education diversity targets.

KEYWORDS
diversity, pathways, socioeconomic status, construction

INTRODUCTION
The benefits of tertiary education to the individual have been well documented. Increased employment opportunities, levels of income, social status and economic security are all linked to the completion of tertiary education (Bradley, 2008). In addition, increased participation in tertiary education benefits the social fabric of the nation. Policy decisions at government level in Australia now focus upon increased participation in particular for those groups traditionally under-represented in tertiary education. One key group under-
represented is students from low socioeconomic backgrounds. Bradley (2008) has demonstrated the persistent under-representation of these students in spite of a wide range of policy initiatives by governments, schools and higher education institutions in recent years.

The Commonwealth Government, as part of its higher education reform agenda, has the increased participation of under-represented groups to a diversity target of 20% of student cohort per university by 2020. For a number of Australian universities, this target represents a challenge. The incorporation of a more diverse student cohort into mainstream higher education will require thorough examination of existing models of student access to ascertain their success as equity models and their overall sustainability as higher education in Australia moves towards a demand-driven, performance based model of funding.

This paper examines two higher education access models (pathways) in construction education. The research study of these two models as case studies is part of a broader Australian Learning and Teaching Council (ALTC) study examining pathways models in construction. The primary objective of the ALTC funded project is to determine the effectiveness of pathways models in improving the diversity of the student cohort in higher education. The final release of the ALTC report and its recommendations is planned for 2012.

**Addressing diversity of higher education**

Twenty years ago Australia was one of the first countries to restructure higher education for wider participation. The results of those changes made it a leader internationally in the movement from elite to mass systems. (Bradley, et al., 2008) The ambitious targets for student participation and attainment in higher education in Australia reflect a neo-liberal economic and social agenda playing out internationally. In most OECD countries “social class is a reliable indicator of the likelihood of participation in higher education at some stage of an individual’s life” (James, 2008, p. 71). In the United Kingdom, young people from the highest social classes are 5 to 6 times more likely to attend university than those from disadvantaged classes (HEFCE, 2006). The more prestigious the UK university, the less likely it is to enrol low SES students. In the United States, students from low SES backgrounds are more likely to enrol in community colleges and undertake shorter degrees.

Governments have been eager to address these inequities. In the United States, an increasingly complex number of programs encompassing outreach, academic preparation, access and financial support operate a wide range of interventions. The best know of these programs – Upward Bound, Talent Search and Student Support Services – are
defined by federal legislation. In England, interventions have focused on raising educational attainment, aspirations and ensuring fair admissions. Aim Higher is the best known of English initiatives – a collaborative effort between universities, schools local councils and communities. The success of such an initiative is still under debate and emphasis is turning towards the issue of broadening access without any depth of support. Northedge (2003) notes “the stately home of elite higher education in the UK has simply been extended by adding a large paupers’ wing. „Proper’ students continue to define the norms, while the rest tag along behind as best they can” (p. 17).

Canada, propelled by a declining work-age population, a labour force crisis and a saturation point level of high SES university students (Berger, 2008; Currie et al, 2007) has undertaken, with some success, a series of loans and funding arrangements under the broad theme of Pathways Canada. The schemes include mentoring, advocacy and financial support for under-represented students.

It is difficult to review access programs across nations. Comparisons are constrained by the differences and difficulties of measurement. Gorard (2008) notes that how low SES and under-represented groups are defined varies amongst OECD countries. Whilst debate continues around the measurement factors, it is obvious that similarities exist between Australia and other OECD nations. Gale et al (2010) note that equity barriers fall into four main categories: availability and accessibility of higher education and achievement and aspirations of students. Based upon Anderson’s (1980) work on conditions for entry to higher education, Gale et al (2010) stress the critical interrelatedness of the four conditions and the constancy of these conditions over time. Put simply, without addressing all four conditions, namely; availability, accessibility, achievement and aspiration, access to university for under-represented groups will not occur.

Measuring successful models

In recent years the primary focus of access-oriented programs has shifted to raising students’ aspirations for higher education (Gale, Hattam et al. 2010). While their academic achievements remain important for gaining access to higher education, students’ aspirations have become central in achieving the growth ambitions of government and institutions, in a context of relatively low student demand for university places.

Drawing on the international research literature and on these exemplars, Gale, (2010) found that programs that are quite likely to increase the number of disadvantaged students going on to higher education than otherwise would have been the case, exhibit at least 4 (from 10) design characteristics, 3 (from 4) implementation strategies and 2 (from 3) equity perspectives (see Table 1).
Table 1 – Four strategies and ten characteristics of outreach programs

<table>
<thead>
<tr>
<th>Assembling Resources</th>
<th>Engaging learners</th>
<th>Working together</th>
<th>Building confidence</th>
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<tbody>
<tr>
<td>People-rich</td>
<td>Recognition of difference</td>
<td>collaboration</td>
<td>Communication and information</td>
</tr>
<tr>
<td>Financial support and/or incentives</td>
<td>Enhanced curriculum</td>
<td>Cohort-based</td>
<td>Familiarisation/site experience</td>
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<tr>
<td>Early, long-term, sustained</td>
<td>Research-driven</td>
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<th>Equity Orientation</th>
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<tr>
<td>Unsettling deficit views</td>
<td>Research, local knowledge, and negotiation local interventions</td>
</tr>
<tr>
<td></td>
<td>Building capacity in communities, schools, and universities</td>
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Source: Gale, Sellar et al. 2010: 12

These characteristics, strategies and perspectives form the basis of a meta-analysis, named the Design and Evaluation Matrix for Outreach (DEMO). The DEMO foregrounds program conceptualisation and design as significant factors contributing to the likelihood of programs making a difference for disadvantaged students (see figure 1). In these terms, the overall effectiveness of a program will depend on the combination of depth (the number of characteristics), breadth (the number of strategies), and equity orientation (the number of equity perspectives).

The DEMO emphasises the importance and value of combining characteristics and draws attention to the strengthening of programs that results from synergistic relationships between different characteristics and strategies. Programs are ‘Very Likely’ to be effective once at least half of the 10 characteristics are combined (and which necessarily involves at least two strategies). In this sense, the strength of a program depends more on the combination of program characteristics, in response to the particular needs of different contexts, than on the specific characteristics that are combined. Therefore, two programs comprising quite different sets of characteristics could be equally effective.

A number of pathways models are currently in use in Australian universities and make a successful contribution to the aim of increasing the participation of more diverse groups in higher education. In a number of cases, these models are excellent examples of a commitment to diversity and a more equitable higher education sector that represents access for all Australians. This paper examines in detail two of these models and highlights the defining features of the model. Too often these models have operated at the fringe of tertiary education access in isolation of mainstream entry and for a variety of reasons have been difficult to sustain over time. Through a detailed examination of two of the selected models and in-depth interviews with key stakeholders along with diversity
data information collected by student cohort surveys, detailed case studies have been built.
Pathways in education must provide an educational ladder of opportunity if the efficiency objective is to be met and a social ladder of opportunity if the equity objective is to be met. (Wheelahan, 2009). These two purposes go together for those from disadvantaged backgrounds because access to education is one of the key ways in which occupational progression and social mobility can be achieved. However, these two objectives are not always aligned. Stuart, (2002) believes that we need to distinguish between measures that deepen participation in education by providing more opportunities and access for particular social groups already represented in education, and those that widen participation by including groups that are under-represented.
Therefore these two contrasting case studies are examined using Gale’s DEMO matrix in order to provide an insight into the effectiveness of the pathways model as a sustainable lifelong learning model, that both widens and deepens participation.

Educational context

The two case studies presented in this research provide contrasting approaches to improving the diversity of student cohorts. It is important to recognise that while both models aim to address the issue of raising aspiration, they are directed towards different groups of students. The first case study is directed at high school students, while the second case study is aimed at people already in the workforce. The effectiveness of the models is discussed in the sections below.

The case studies: VET in schools – pathways to construction

The “Pathways to Construction” is a VET in Schools program in building and construction. The program was set up in 2008 and has approximately 30 secondary school students from years 11 and 12 enrolled in both years of the program. The students attend RMIT university one day a week and undertake competencies in the Certificate 4 in Building and Construction (Building). The subject contributes to the students’ final VCE and carries a loading in the calculation of the students’ Australian Tertiary Admission Rank (ATAR). The subject is built around the Certificate IV in Building and Construction and consists of 1400 hours of instruction and student work. Upon completion of the two year program, the students are eligible for the Certificate IV, which is embedded in the Diploma with one year credit transfer. RMIT staff teach the subject and maintain regular communication with the students, their schools and their guardians. The VET in Schools coordinator conducts recruitment, promotion and liaison and enrolment and is the link between the university, the schools and the students.
While the transfer pathway is not guaranteed, the VET in Schools “Pathways to Construction” Program is an innovation of RMIT University, and deliberately targets secondary schools to provide access to tertiary education for students not normally represented. There have been two successful intakes with 100% retention rate. The students involved in the Pathways Program represent a more diverse cohort than the traditional intake to the Certificate IV in Building and Construction. The 2009 student intake indicates 50% of the students come from low SES groups, whilst 40% of the 2010 intake come from low SES groups. The high percentage of students from low SES groups may be explained by a number of factors:

- The recruitment processes used by the VET in Schools coordinators at RMIT
- The aspiration and enthusiasm of careers teachers in particular schools
- The appeal of the building industry as an employment destination to particular parents and school communities
- The cultural perception of the building industry as an industry of opportunity for the less academically inclined adolescents
- The central city location of the RMIT campus offering Pathways to Construction, VET in Schools

After completion of the Certificate IV in Building and Construction (AQF 4), the students have the opportunity to enrol into the Diploma of Building (AQF 5) and then into the Bachelor of Applied Science (Construction Management) (AQF 6). The model has interrelated links between each of the AQF levels (4 – 6) by embedding qualifications as exit points, whilst still allowing access to higher AQF levels.

The case studies: Graduate Certificate in Construction Management

The Graduate Certificate in Construction Management is part of AQF level 8. It is offered at RMIT through the School of Property, Construction and Project Management. The Graduate Certificate was offered for the first time in 2007 and there are currently 16 students enrolled and intakes have been consistent at 25 over the last 3 years. In spite of consistent enrolments, only 12 students have graduated since 2007. The Graduate Certificate aims to address the need for advanced management training in the construction industry by providing training within an accelerated time frame to suit industry needs. The target group for this qualification is trades people who are in or could move into supervisory roles. The course is one year part-time with on-campus delivery. There are number of entrance requirements. Applicants are required to:

- Be currently employed in the construction industry
- Possess at least a Certificate IV in Building or a related trade
- Possess some supervisory experience and at least three years experience in the construction industry

Both of the case studies are based upon models that provide access pathways to higher education. The effectiveness of each model is discussed in the next section.

**RESEARCH METHODOLOGY**

The two case studies examined in this study are both located in the built environment discipline at RMIT University. RMIT is an urban, dual-sector university located in the city of Melbourne. It is one of the largest universities in Australia. As a dual sector institution, RMIT has vocational education along with a diverse suite of higher education undergraduate and post-graduate degrees. There are a number of pathways models in use in the university. It is therefore valid to examine two of these models within a dual sector environment. Having access to both sectors in the same institution provides valuable longitudinal pathways data that can be readily utilised in the case studies.

The first case study „VET in Schools – Pathways to Construction“ operates across both the VET and HE sectors of the university. At the time of writing the majority of the participants were engaged in either Certificate IV (AQF4) or Diploma (AQF5) level training. The program exists for students to work through AQF 4 to 7 in a sequential linear progression. The second case study is the Graduate Certificate (Vocational) in construction (currently at AQF8). Both of the case studies operate in the mainstream provision of RMIT offerings and have open enrolment with no pre-requisites. Some entry provisions apply to the Graduate Certificate.

Both case studies were examined on the basis of data collected by a student cohort survey, staff interviews, key stakeholder group and individual student interviews. The data was analysed using the DEMO Matrix developed by Gale et al (2010) at the National Centre for Student Equity in Higher Education (NCSEHE, 2010). The DEMO model provides a conceptualisation of the relationship between particular features of effective programs that are designed to improve equity and access of under-represented students in higher education.

Gale (2010) notes: “The DEMO provides indicative guidance for the analysis of any program in terms of effectiveness, including the dynamics produced by different combinations of characteristics and strategies” (p. 13).

The DEMO model is based upon research identifying ten characteristics of successful access programs measured against the breadth of strategies. The strength of a program in terms of effectiveness increases from weak to very strong as its depth of characteristics and breadth of strategies increases. By evaluating the models inherent in the two case studies selected for this paper against these characteristics, a better abstract indicator of
the likely effectiveness in terms of achieving student cohort diversity is provided. The next section outlines the background of each case study.

RESULTS AND DISCUSSION

Research by Gale et al (2010) has identified ten characteristics of effective equity programs. Effective programs were defined as those that have a likelihood of increasing the number of disadvantaged students going on to higher education than would otherwise have been the case. Gale et al (2010) grouped the characteristics into four strategies: Assembling resources, Engaging learners, Working together, Building confidence. Both of the case study models are discussed in relation to these strategies to ascertain their effectiveness in improving student cohort diversity.

Assembling resources

Three characteristics are inherent in assembling resources – People Rich elements; financial support, and early, long-term sustained approaches. People rich resources and elements are indicated by activities used within and in parallel to the model that provide for the development of on-going relationships between stakeholders. Relationships that focus upon mentoring, guidance and support are paramount, along with an understanding of the situation and capacity of the student cohort.

The VET in Schools model was able to provide a strong people-rich component to the program. Orientation and information nights were conducted in schools the year before the students commenced and careers teachers were briefed about the program and its pathways. In addition to a VET in Schools coordinator, RMIT staff were available for consultation. Once in the program and visiting the university for one day a week, students were exposed to RMIT staff that had all been employed at the university for some time and were able to give casual advice about university pathways and credit transfer. Staff/student ratios were deliberately capped at 15 students per class. If a student was absent or performing poorly, the VET in Schools coordinator acted as a mentor to the student and his parents.

The survey and interview results from the students also reveal that the students understand the relationship between the VET in Schools Pathways to Construction program and future opportunities. Students in their second year of the program (mostly year 12 students) were focused upon completing their high school studies and moving into the Diploma and later the Degree in construction. The students were well aware of the university structures and the contexts and lifestyles arising from these structures. Their responses indicate the view that they believe participation in higher education is
achievable for themselves and “everybody”. For a number of the students this perception of university as being for “everybody” was an important change to their understanding prior to entering the program. Some of their comments indicate they appreciated the people rich element:

—*If hadn’t done this program I wouldn’t know of the pathways now I know If I don’t get an apprenticeship I can always come back to RMIT University and try to get the diploma (then the degree) – the teachers have explained this*” (R)

—*would be the first in my family to come to uni—I tell my parents what I go through when I’m here then they know*” (R)

The students, although most are still in senior secondary school, indicated a familiarity with the university setting and staff. Although they had been quite anxious at the outset and commencement of their first year, all were not at ease and felt confident in the environment; all were keen to return to the university at some stage. A few had re-aligned their career aspirations in the face of what they had encountered through this program.

By comparison, the Graduate Certificate in Construction was unable to provide a people-rich experience for the students. The one lecturer was also responsible for recruitment with some direct marketing provided from the university school (Flyers, website updates). The recruitment and information processes consisted of a mail-out to Victorian building companies with a number of posters displayed on commercial sites. The non-targeted natured of the marketing meant that mature-aged students with first degrees were enrolled alongside students who had completed secondary school. Some students were employed in the construction industry; others were attempting to gain entry to the industry. As the lecturing staff were employed on a contract basis, there was little “university-rich” understanding of pathways and credit transfer. The graduate certificate was not formally articulated to any other program in the university. The information night was a one-off event, with students then left to find their way to the first class or appropriate pathway. Students in the VET model had access to people-rich resources, whilst the Graduate Certificate students did not have such access.

A second characteristic of assembling resources is the use of financial or monetary support – such as incentives, scholarships, bursaries or costs. Neither of the models provided any financial support. In the case of VET in Schools, students or their guardians paid up-front course fees and all associated costs such as travel and work gear. In the case of the Graduate Certificate in Construction, students paid all course fees as well as associated costs.

The access to such incentives did not appear to affect the student cohort in the VET Pathways, but the drop-out rate for the Graduate Certificate students was considerably
higher. Without a comprehensive survey it is difficult to isolate financial factors as a contributing element, but it is reasonable to assume some degree of contribution to the decision to remain in or leave the program.

Another characteristic of enabling resources is early, long-term and sustained intervention by the university in students’ careers. In the case of VET Pathways, RMIT University had committed staff, resources and status to the model. School students were enrolled as RMIT students and afforded the same status as other VET students. Staff were specially recruited for the program and allocations of funding set aside for resources. These resources included administrative as well as academic support. The Graduate Certificate was not supplied with additional resources, staff were employed on 12 month contracts and the university school provided limited administrative support. The program co-coordinator was not provided time allowance for student support or administration. As a result, there was no early intervention or follow-up of students who dropped out.

In addition, the intervention relied upon the students being proactive. Enquiries about the course were followed up with a marketing brochure and ended there. Students who did not attend the information night were not re-contacted.

Gale et al. (2010) note the importance of sustained intervention over time to help students make the transition to higher education. Although based upon his study of school outreach programs, the need for early, sustained interventions realised with financial and people-rich strategies is applicable to all students entering higher education. The difficulties faced by the Graduate Certificate students in this case study were similar to other younger students contemplating higher education. Unfamiliarity, complex information avenues and a lack of sustained support effort hindered opportunities and efforts. Comments from the students in the Graduate Certificate program included:

—“Articulation or other opportunities and where this course leads has not been explained to us yet”.

—“For me this course was a bridge. I thought it went into a Masters degree, but I now know it doesn’t”.

The importance of assembling resources as a strategy to improve the effectiveness of models is paramount to developing a more diverse cohort in higher education. The Higher Education Funding Council for England (2006) found that some of the most effective activities for increasing progression to higher education are those strategies that provide information, advice and guidance. In terms of strategy, only the VET in Schools pathways model was able to provide depth of strategy in this area.
Engaging learners

A key characteristic of engaging learners is recognition of difference. The recognition of difference is premised on the perspective that students in these two case studies bring a range of knowledge to their formal education and this should be recognised and valued. Both programs provided RPL and recognition of learning, both formal and informal, although only the Graduate Certificate acknowledged this through formal “exemptions” from units of study. However, VET Pathways staff were cognisant of underlying skills and knowledge and created opportunities for students to share their existing knowledge. Both programs were deliberate in their targeting of students; the Graduate Certificate demanded either formal qualifications or informal work experience, whilst the VET Pathways concentrated upon motivation and interest in the industry. Thus both models in the two case studies recognised and valued this characteristic. The knowledge students brought was valued and recognised, along with the learning capabilities of the students.

A second characteristic of engaging learners is the pedagogy that is designed for the academic curriculum. The quality of the curriculum needs to be enhanced to capture the particular cohort and prepare them for future study higher education. Neither model enhanced the academic curriculum to sustain the ongoing quality of everyday lessons. Both programs rigidly adhered to the set national curriculum as a tenet of the program. Neither program had staff who felt qualified to vary the curriculum to suit the learners. Hence, changes to the curriculum were made at the margins, if at all.

This adherence to a prescribed national curriculum was not seen as a negative by the students, who welcomed the opportunity to obtain a national certificate for their studies. This was true of both models:

—People are doing this course to be able to change careers – it gives them a qualification” (Graduate Certificate staff member).

Whilst Gale et al. (2010) have identified this characteristic as important in engaging learners, students in both case studies did not value an enhanced curriculum as much as the credentialing arising from the standard curriculum. This may be an indicator of the need for further research in relation to this characteristic.

Similarly, neither VET Pathways nor the Graduate Certificate engaged in research-driven interventions. The research capacities of RMIT were not used to inform program design or implementation or evaluation. Staff in both programs felt confined by the national curriculum and were afraid to steer the curriculum away from the set competencies. Part of this was due to the cultural background of the staff, part appeared to be due to the fact that they did not “own” the program and felt that intervening in curriculum or program design was not their prerogative. This was true, even when student numbers in the
Graduate Certificate declined and it was obvious students wanted greater control over the design of the program, especially assessment. Results-drive research did not affect either program design or evaluation in either case, although the VET Pathways coordinator attempted to intervene to affect change when results indicated dissatisfaction with program implementation.

**Working together**

Working together as a strategy has two identified characteristics: collaboration and cohort based (Gale et al., 2010). A key measure of working together is collaboration between stakeholders across different sectors and agencies at all stages of program development and enactment. Evidence from the VET in Schools Pathways Project illustrates the extent to which the whole school systems, independent school and teachers were involved in the program design and implementation—

—*Our careers teacher came to my homeroom at X College and he advertised that RMIT were having an information night at my school, along with other schools in the area and I went along and heard from guys who are in second year now and they talked about what they did and I found that interesting. Then my parents and I were talking to the RMIT coordinator and then I had an interview and then I got in*”. (Z)

The involvement of parents and teachers in on-going program design was also evident:

—*My parents like the fact that I am here, but they don’t push it. We get reports from RMIT to the school and my parents and they talk about the future courses with Elise (RMIT Coordinator)”*. (K)

—*Yeah my school is helpful. Like every Wednesday they let me come in here and they make me do the work, but I have to catch up other work – but they don’t make me do too much. It’s okay, they understand”. (R)*

Each school was making specific accommodations to help implement the program—

—*At X College in mainstream course, we’ve got a line system and on Wednesdays years 11 and 12 have a sports session in the afternoon. As the lines form you have one subject on every line and there are six lines, the VET line at X College is on the Wednesday morning in the double so at X College there’s a double in the morning followed by an assembly and then there’s recess and then there’s one period and then there’s lunch and then you have double sport in the afternoon. So you don’t miss out on – you only miss out on one period on a Wednesday”. (Z)*

All the stakeholders, students, parents, schools and RMIT, were clearly involved in the VET in Schools Pathways program. In the course of the interviews, all the students felt
that their schools and parents were in partnership with the university to provide a positive outcome for them. This was evident in their familiarity with the program and its implementation in their schools. None of the students reported clashes with their own school about course material, requirements or attendance. There was evidence that the whole of their community, including in some cases their part-time employers were both aware of their studies and actively providing motivation, support and interest in what they were learning and the outcomes of this learning.

By comparison, the collaboration and cohort-based engagement of the stakeholders in the Graduate Certificate in Construction was limited, if evident at all. The various stakeholders – the students, the employers and the university were operating independently especially in regards to program design and development. As a pre-packaged competency based curriculum, the Graduate Certificate had not input from the student’s employers and the students enrolled in a “take it or leave it” program. The course design conforms to national standards and alterations can only be made at the local level through teaching modifications that recognise the local differences. When asked if the Graduate Certificate needed development in this area, the staff gave the following answer:

—The curriculum’s got to be developed, and I think the curriculum’s got to be fairly consistent with what the industry’s requiring of construction managers, which is similar to what I suppose we’re doing in our undergraduates currently. And making certain that we develop Industry specific skill that are a lot more tailored towards architectural/engineering issues, and starting to develop some of those skills. And that’s where the void is”. (Staff)

In terms of implementation, the Graduate Certificate in Construction is structured around industry availability – rostered days off – so attempts are made to facilitate its attendance success. This consultation is made with the students, and to a limited extent their employers, but does not extend to the wider industry. The program does not articulate into any existing pathway and students are required to seek their own credit and pathway into further study. This was noted by staff and students alike:

—I don’t think it’s in the wrong school. I think the structure’s incorrect. I think we shouldn’t have it as a Grad. Cert. only. I really do believe we should have it going on to a Masters”. (Student)

—The current Graduate Certificate being at 12 month solo currently. If they wanted to develop their skills and continue on, they’d have to enrol into, as far as RMIT goes, the Master in Project Management. And that’s probably the only link we have. If they wanted to continue, they’d have to outsource it
to another university, and look at going into a Diploma of Construction or a Diploma of Building”. (Staff)

Not every student in the program was supported:

—\textit{my employer doesn't actually support me coming to this program at all. So it is something that I do out of my own time, and effort and price”}. (Student)

In relation to pathways and inclusion of the whole student, staff, employer cohort there was considerable misunderstandings. This was evidenced in the student’s understanding of where the program was in terms of accreditation and on-going studies:

—\textit{Yeah at the moment, I know that they don’t, yeah, I don’t know the pathways. I don’t know if the Master is going to be held next year. I don’t know if there’s going to be another course or a Dip or whatever it is, they still haven’t told us”}. —\textit{I’m not aware of what credit you’d get if we do start the Masters?”} (Student)

In terms of evaluation, the VET in Schools Pathways Project was far more successful in collaborating with all key stakeholders on program design and implementation than the Graduate Certificate in Construction.

A second element of working together is developing an approach that engages with the whole cohort to change peer cultures and still supports individuals. A clear influence is the size of the cohort – how many students are involved. But the actual number is not as important as the contribution this number makes to changing peer group attitudes towards university pathways. Gale et al (2010) make the point that the operational footprint could be state-wide, even by the measure of one student. Essentially it is the capacity of that one student to influence the attitudes and behaviours of peers. In this evaluation, the VET in Schools model engaged with larger cohorts and had affected peer culture as well through wider dissemination and promotion of exemplars. There was little evidence that the Graduate Certificate had achieved the same cohort based change.

\textit{Building confidence}

Gale et al. (2010) also identify two characteristics in building learner confidence: communication and familiarisation. The VET in Schools model gave students information about university life, how to get there and information once there. Evidence from the interviews with students endorsed this communication:

—\textit{If hadn’t done this program I would know of the pathways I now know. I know if don’t get an apprenticeship I can always come back to RMIT University and try to get the Diploma, then the Degree”}.
When asked about this communication and familiarisation with the university, this staff member was very clear about the success of VET in Schools:

—If students do not get an ATAR score of mid seventies, the normal thing is that they won’t get into the Diploma of Building here at RMIT because I think this year’s intake we needed an ATAR score of 74 or 73. Whereas young Donny, one of our second year students I think he got 52 for his ATAR score. Now Donny is one of our best VET in Schools students and when he goes into the diploma as a second year student next year, he’ll be one of the best students in that class. He’ll run rings around all the other students because one, he’s got building skills and knowledge and he loves it and he works hard at it and he works at his studies because he enjoys it, he wouldn’t be here at all if he wasn’t in pathways. He would have gone another path similar to getting an apprenticeship, doing a four year apprenticeship, then coming in as a part time student doing a Diploma of Building, because his score, he wouldn’t have been accepted, if ever and so he would have had a 10 year path in front of him to get his Diploma of Building and yet, he will be one of the best graduates we have at the end of the Certificate IV and I’m assuming when he goes through to do the diploma, he’ll also be one of our best graduates. The pathways really worked quite well for him because he wouldn’t have been on this track if he hadn’t been involved in the VET in Schools.”

Appadurai (2006) has argued that “without systematic tools for gaining relevant new knowledge, aspiration degenerates into fantasy or despair” (pp. 176-177). Students involved in VET in Schools, Pathways to Construction, have, through student/staff ratios and attendance at the university, access to people who have significant experience in university programmes and teaching. The students are able to gauge or benchmark their performance against the requirements of the new context. The teacher/student ratio of 15/1 produced great opportunities for interaction and discussions about the university environment, and students were immersed in the university one day a week for the whole year.

By comparison, the Graduate Certificate students had access to limited information and although they visited the university on RDOs (Rostered Days Off), the intensive nature of the classes meant they did not participate in the wider university life. Students noted that classes could have been held anywhere – they were not really part of the campus, commencing classes at 7:30am. The idea of being a higher education student was lacking – the Graduate Certificate students did not have the opportunity to benchmark their
performance against other higher education students. The characteristics of building confidence were absent in this model.

The above analysis indicates the strength of the two case studies and their likelihood of success in improving the diversity of the higher education student cohort. Of the two models, the VET Pathways have eight out of ten characteristics across all four strategies. It is therefore a very strong model for promoting under-represented student groups into higher education.

By comparison, the Graduate Certificate in Construction has two characteristics out of the ten, across two strategies. As a model it is very weak and unlikely to make any impact in providing access to higher education for low SES or other under-represented groups.

**CONCLUSIONS**

During the last 15 years there has been a long term failure to increase the rate of participation of low socio-economic status, Indigenous and regional and remote students. This has happened at a time where some other nations have begun to see results from their social inclusion initiatives (Bradley, 2008, pg 149).

Gale et al. (2010) have argued that the Australian higher education sector is “haunted” by the absence of change in participation rates for certain under-represented groups across the sector and over time. They argue that good programs that address the under-representation of disadvantaged groups throughout the sector have operated in isolation and their effect on the sector has been minimal. Gorard (2008) has argued that measuring this under-representation is complex and parallels difficult to create. What is evident is that achievement of the attainment target outlined above will require concerted action on a number of fronts, including an examination of the effectiveness of pathways models. In this paper, two models designed to provide access to higher education have been examined as separate case studies. The two case studies in construction education pathways have been evaluated using the DEMO model (Gale et al., 2010)

Whilst evidence from these case studies indicates that pathways models can improve student diversity ratios, it is clear from this study that a number of key characteristics must be present for the pathways model to be truly effective and sustainable over time. These characteristics need to be across strategies such as appropriate resources, learner engagement, collaboration and confidence building.

Whilst this study has examined only two case studies in the same university, there is still sufficient evidence to indicate the viability of the DEMO model as a useful evaluative tool which could be applied to further pathways models in higher education.
REFERENCES


