



# **New Zealand Association for Cooperative Education 2013 Conference Proceedings**

*Strategic Directions in Cooperative Education*

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*Editor*

*Karsten E. Zegwaard  
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**Front cover:** Lake fountain, main entrance to AUT University Manukau Campus, Auckland, New Zealand

# New Zealand Association for Cooperative Education 2013 Conference Proceedings

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# CONTENTS

|   |       |
|---|-------|
| Exploring Stakeholder Representations of Cooperative Education Relationships through a Network Theory Perspective<br><i>Jenny Fleming</i>   | 1-5   |
| The Schizophrenic University and its Strategies: Dividends and Returns on Disaster<br><i>Jessica Johnston</i>   | 7-9   |
| Who Wins with Capstone Industry IT Projects?<br><i>Brenda Lloyd, Susan Chard</i>  | 11-13 |
| Responding to Student Diversity: Strategies for Placing Work-Integrated Education Students<br><i>Jacqueline Mackaway, Theresa Winchester-Seeto, Anna Rowe</i>                                   | 15-18 |
| Practical Migration Training Program: Increasing Awareness and Enhancing Employability<br><i>Sue Marshall, Carolyn Woodley, Desiree Holland</i>   | 19-22 |
| Lecturers Active in the ICT Industry: A Mutually Beneficial Relationship<br><i>Inge McCarthy</i>  | 23-26 |
| Is this my Internship or my First Job? High Performance Intern Issues<br><i>David Skelton</i>   | 27-29 |
| Practitioner Heuristics: Adapting Student to Co-op Placement<br><i>Noel Spanier, Drew Franklin</i>  | 31-33 |
| Reflections of ICT Capstone Projects: Paving the Way for Future Students<br><i>Aaron Steele, Sandra Cleland, Judith Engelbrecht</i>   | 35-39 |
| The Role of Stakeholders in Work-Integrated Education: Comparing the Perceptions of Academics, Host Supervisors and Students<br><i>Theresa Winchester-Seeto, Anna Rowe, Jacqueline Mackaway</i> | 41-44 |
| Work Placement Influences on Students' Perceptions of Ethics and Values<br><i>Karsten E. Zegwaard, Matthew Campbell</i>   | 45-48 |



# Exploring Stakeholder Representations of Cooperative Education Relationships through a Network Theory Perspective

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Cooperative education is based upon relationships being formed between students, industry and the university. The nature of the relationships can vary depending on the discipline and the structure of the Work-Integrated Learning experience. It is argued that we need to gain a better understanding of the nature of the relationships between the cooperative education partners, and that research needs to be underpinned by relevant theory (Coll & Zegwaard, 2011). Drawing upon network theory, this paper explores the relationships between the student, industry and university in the context of sport cooperative education.

Establishing contacts within different organisations is considered to be the process of networking. However, networks occur when links between organisations with mutual interests become more formalised. The relationships that are formed can further be described as a network structure when organisations and individuals realise and recognise that by coming together they can actively accomplish broad or common goals (Keast, Mandell, Brown, & Woolcock, 2004). In network structures people actively work together to accomplish what they recognise as of mutual interest or concern. Once formed network structures generally require separate actions on the part of individual members, but the outcomes reach beyond the simultaneous actions of independently operating organisations. In a network structure members are committed to the goals and mission of their own organisation but in addition also have a focus on joint network goals or outcomes (Keast et al., 2004).

The formation and on-going activities of network structures often rely heavily on interpersonal relationships. To be effective participants must be able to trust each other to work to their mutual benefit. Trust is considered to be integral within organisational relationships where there is little formalised structure (Shaw & Allen, 2006). In network structures many of the members may have already known each other and developed trust before the network structure was formed.

Cooperative education relationships have some similar properties that align with the concepts of network structures in that they are independent organisations, linked formally through learning contracts or similar agreements, with all parties working together for mutually beneficial outcomes. The purpose of this study was to explore stakeholder perceptions of cooperative education relationships from a network theory perspective using a network analysis framework.

## METHODS

An intrinsic case study methodology was used (Stake, 1995). The case was the cooperative education programme within the Bachelor of Sport and Recreation at Auckland University of Technology (AUT). Participants (six students, five academic supervisors and five industry supervisors) were invited to draw and explain what they considered to be the cooperative education relationships. The relationships between the 'actors' or 'nodes' were analysed using visual identification of connectivity patterns to determine the following: focal point, symmetry, intensity, multiplexity, centrality and directionality (Table 1).

Table 1: Network analysis considerations.

|                  | Considerations   |
|------------------|--|
| Focal point      | A node that is highly central to other nodes.                                    |
| Central actor    | A node located in the inner parts of the network as compared to all other nodes. |
| Peripheral actor | A node that is located on the outer points                                       |
| Symmetry         | The reciprocity and direction of ties  |
| Multiplexity     | The extent to which two actors are linked together by more than one relationship |
| Triad            | The relationships between three nodes in a network                               |
| Centrality       | The number of ties one has with other actors                                     |
| Directionality   | One-way or two way linkages  |
| Intensity        | The strength of interactions   |

Adapted from Quatman and Chelladurai (2008)

#### FINDINGS AND DISCUSSION

Networks occur through formalised links between organisations that are operating independently. The participants were able to clearly identify the stakeholders that form the cooperative education 'network'. Applying a network analysis, all diagrams identified at least three distinct nodes (the university, the student, and the host organisation or industry). Some participants created separate nodes for either the academic or industry supervisors or just referred to these roles rather than the organisation. Ten of the sixteen participants drew the relationships as a triad network similar to the illustration in Figure 1.

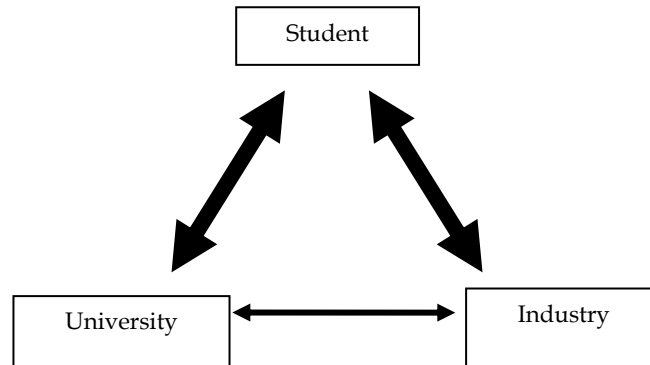


Figure 1: Triad network structure.

In the triad representations there was no clear focal point and all nodes were connected to each other with equal centrality. The triads were mostly symmetrical and with similar distances between nodes. In seven of the diagrams the student was placed at the apex of the triad with the university and industry at the base, at the same level. However, the participants did not indicate in their descriptions that this represented a hierarchical position in any way.



A student-led focus within the relationships was common in the responses. One academic supervisor commented that “the relationship was created initially by the student” (Academic I1). An industry supervisor shared their views on the relationship:

Ideally I think I would like it to be student-led, and student focused and I think the way that it’s designed it would be like that. They have their target and their outcomes that they need to meet; I’ll put the student at the top. I see the [sport organisation] and university on the level just because they complement each other, they’re not competing against each other at all, so the student should be coming to me to [Sport Organisation] with ideas. (Industry I4)

Another academic supervisor drew a triad relationship (Figure 2) and explained that they started with the university in the centre of the page as they felt that they were more “dominant in the relationship” but then placed the industry at the same level and the student “fitted in” above and connected the two (Academic I2).

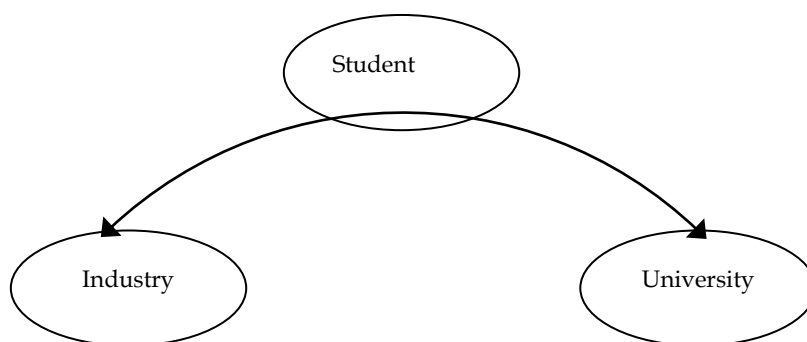


Figure 2: Academic supervisor’s perspective of students connecting university and industry together.

The relationship pictured in Figure 2 suggests that the student node can be seen as a mediator or a necessary connector between two other nodes.

Network structures differ from other organisational structures because no one person is in charge. As such typical forms of power and authority do not work in network structures (Winkler, 2006). This is also consistent with the structure of cooperative education and was evident in the lack of a hierarchical structure in all of the diagrams that were drawn as representations of the relationships. Although some organisations (such as the university) may have more formal power in a network because they provide a larger share of valued resources, this power cannot be used unilaterally in a network structure because each member is an independent entity (Keast et al., 2004).

Generally there was consistency in the directionality of the relationships, with most participants representing 2-way ties between each node. However, differences in the intensity of the relationship were evident by the number of arrows (2 arrows indicated stronger ties) or the thickness of the arrows and this was confirmed through the participants’ descriptions of the relationships. The participants generally commented that the relationships between ‘university and student’ and ‘student and industry’ were stronger than the direct relationship between the university and industry.

Six of the participants represented the cooperative education relationships with a greater level of multiplexity, that is more than three nodes or ties (Figure 3).

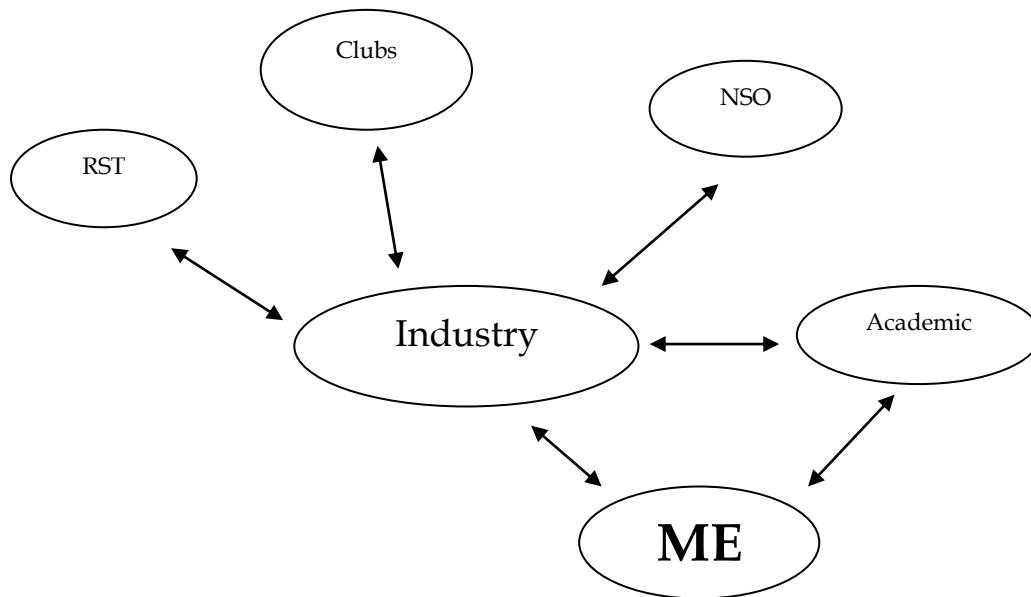


Figure 3: Relationships represented by greater multiplexity.

The increased number of ties tended to be additional ties between the host organisation and other sport and recreation industry organisations. These additional nodes can be regarded as ‘peripheral actors’ as they were located on the outer parts of the network as compared to all other nodes. For example, one student (who was placed in a regional sports organisation) commented:

The national sports organisation, clubs and regional sports trust they are always talking to each other, I am pretty sure they have meetings quite often ... but those meetings are important to keep that relationship going as well. (Student I3)

One student placed themselves in the centre of their diagram (Figure 4), as the focal point or central actor as they were “bridging the gap...in the middle of all three” (Student II).

In contrast to what was evident in Figure 1, the relationships represented in Figure 4 illustrates that student had the greatest multiplexity. The student perceived that they were the key focus of the network relationship.

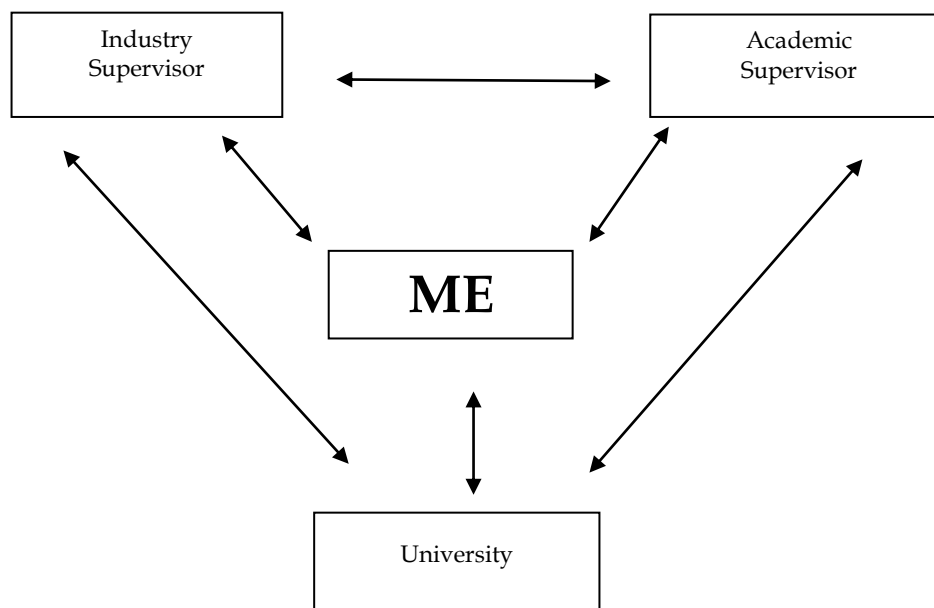


Figure 4: Relationships with the student as the focal point.

## CONCLUSION

Applying network theory to the analysis of the diagrams drawn by the participants confirms that cooperative education was considered as a triad relationship between students, the university and the host organisation or industry that in most cases was symmetrical. The relationship was not considered to be hierarchical, but many of the participants identified that the student was the focus for the relationship. It was noted by some that the relationship was often 'student led'. Although there were mutual benefits arising from the relationships, individual stakeholders had different perceived outcomes and benefits.

In many cases two-way relationships were evident with the student-industry and student-university ties being the strongest. The university-industry relationship was perceived as the weakest tie and it is common that the relationship between the university and a particular host organisation may not otherwise exist without the connection of a cooperative education student. Relationships in the sport sector are often formed among people who know one another or are friends (Babiak & Thibault, 2008). The interaction between the student and host organisation is critical to forming the initial relationship. However, for a long-term sustainability the industry and the university need to consider strategic alignment rather than being based on individual relationships alone.

The findings of this study introduce the use of network theory in an attempt to gain a better understanding of cooperative education relationships. This case study illustrates that cooperative education does align with concepts of networks structures. However, further research is needed to explore this concept further in other disciplines and Work-Integrated Learning models.

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# The Schizophrenic University and its Strategies: Dividends and Returns on Disaster

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Universities today are businesses. They are income-generating units in intensified competition for students and resources. Academics are moving from curiosity-driven research in institutions known for their role as critic and conscience of society, towards conducting more applied research for industry. Academics are using market-like behaviour themselves, deploying teaching, research, consultancy skills or other applications of academic knowledge to enhance their own and their university's market value (Deem, 2001; Bok, 2004; Slaughter & Rhoades, 2004). This is the definition of 'academic capitalism' which purports to explain and describe the reconceptualization of universities as 'knowledge industries' taking part in 'knowledge transfers'.

This applied marketplace-based orientation toward education is supported and encouraged through the New Zealand Ministry of Education's Tertiary Education Strategy 2010–2015 policy document (Ministry of Education, 2010). It foregrounds the Government's expectation that New Zealand universities primarily "create and share new knowledge that contributes to New Zealand's economic and social development." This emphasis on economic relevance and applied research is consistent both with the government's view of universities as sites for training the workforce and the more recent idea of harnessing universities for its Economic Transformation Agenda.

However, this same document also establishes three core roles of universities: "To undertake research that adds to the store of knowledge, to provide a wide range of research-led degree and post-graduate education that is of an international standard, [and] to act as sources of critical thinking and intellectual talent" (Ministry of Education, 2010). Significantly, the Ministry of Education's strategy acknowledges no contradiction, no disconnect between the university as the critic and conscience of society – one of the defining characteristics of New Zealand universities over other tertiary education providers according to the Education Act 1989 (Ministry of Education, 1989) – and the Ministry's market-driven expectations that universities contribute and apply their knowledge towards society's economic development. Combined, these variously stated goals illuminate the schizophrenic expectations experienced today at most universities.

These contradictions become flash points when a natural disaster strikes. On 4 September 2010, at 4:35 am, Christchurch, New Zealand suffered a massive 7.1 earthquake. For a year and a half the region has been rocked by swarms of large earthquakes that killed 185 people, rendered thousands homeless, and destroyed more than one-third of all buildings in the central business district.

For the university, the most substantial damage wrought by the quakes was the loss of enrolments. Overall, the university suffered a 13% drop in enrolments, with 25% of first year students leaving, and 8% of continuing students opting not to return. International enrolments, coveted because international students pay fees three to four times that of domestic students, dropped by 30% (AAP, 2011). The cumulative impact in reduced domestic and international first year student enrolments will be experienced for years as those non-enrolled students do not progress to second and third year study. The dollar value all these lost enrolments represent, coupled with the costs of damage to buildings not covered by sufficient insurance, have left the university, according to the Vice-Chancellor, "facing significant financial challenges," with the "disestablishment" of some departments and the scheduling possibly 300 forced redundancies over the next three years (Donnell, 2011), and more recently the announcement of an deficit of NZ\$67 million for the 2012 financial year; a remarkable turnaround from the NZ\$28 million surplus reported for 2011 (Stewart, Lynch & King, 2013).

## METHODS

It is within this environment that four members of the Senior Management Team (SMT) and three lecturers involved with Community-Based-Learning (CBL) were interviewed about their views surrounding the needs of, and problems with, CBL within the region during its current 'challenging' financial and environmental situation. The seven open-ended questions are in the appendix. All the interviewees were selected based on their interest in developing CBL. Because the number of university staff members involved in CBL is so small, the lecturers' departments and SMT titles will not be identified. All interviews took place between August and October 2011. While this small sample of seven white men limits the generalisability of this case study, it is hoped that the analysis will raise awareness around the risks of CBL generally in the competitive global tertiary environment, and its application more specifically in disaster zones.

## RESULTS AND DISCUSSION

Confirming much of the literature about disasters, all interviewees focused on the idea of transformations, the desire to change 'ossified' and outdated ways of being, buildings, perceptions, and structures. In fact, everyone interviewed continually emphasised the word "opportunity". All interviewees conceptualised the earthquake as forcing new beginnings, of wrenching people out of their "comfort zones". An SMT member continually quoted American economist Paul Romer that "a crisis is a terrible thing to waste" (Arts Matters 2011). In this view, the upheaval and recovery surrounding the earthquakes should not be "wasted" but the university needed to more fully capitalise on the earthquake and recovery in the current environment.

This type of discourse, of "wasting a crisis," highlights the current political economic context within which universities operate. While disasters take physical tolls, they also inscribe their impacts on current social systems incorporating the disruptions into the continual on-going market solutions and reproduction of economic inequities. One SMT member described an "opportunity" of one woman and her appreciative interactions with the Student Volunteer Army (SVA):

She was just so distraught. Her house is wrecked, the mud and stuff in the yard, inside the house and she really did not know what to do. And she said she looked up and she saw this army of people walking down the street with shovels and wheelbarrows and she said it was like a miracle. And there is an opportunity to build on that – because it was good for everybody, it was good for that woman, it was good for the students, it was good for the city.

In this narrative, the earthquake and the resulting liquefaction destroyed this woman's house, leaving her homeless and vulnerable. The SVA benevolently and altruistically supplies the manual labour to rid her house and yard of layers of liquefaction, which she is said to describe as a miracle. The SMT member portrays this situation as "good for everybody". What is left unsaid and unaccounted for is the reality after the SVA leaves – the woman is still in an unsanitary "munted" building. So what has been stated as good "for the city" and "for the students" is entwined with the absolute ruin of this woman's home. The appreciative woman is mired in liquefaction and has no choice but to deal on a daily basis with a destroyed personal environment, and is dependent upon assistance from an overwhelmed city council, inconsistent and contradictory building experts' advice, besieged and unresponsive insurance companies, and the social structural conditions that allow elite mostly white students to become represented as "saviours." Her ruined home is merely the backdrop of further opportunities for the university, the students and the city.

Many examples and promotion of these types of "good" opportunities articulated by the interviewees failed to recognise the pain and destruction left in the wake of the earthquake, of the social economic system in which some benefit more than others. Indeed, for many people, the earthquake meant spending the bulk of their time attempting to file insurance claims (if they had insurance), searching for accommodation, enduring commutes lengthened by "quake traffic" of up to thrice as long as usual, standing in lines for water, digging out from under liquefaction, attending memorial services, and dealing with upset family members who couldn't sleep at night.

In this environment, what is the purpose of CBL? From the perspective of university a SMT member, this type of community involvement generates new positive public relations, employability skills and government approval:

Service-based learning has never been prominent in the university sector in New Zealand, and the issue, of course, is that it is seen as a sort of second-rate kind of academic endeavour by some. So, the challenge ahead is to mainstream it and make it acceptable to academics, but also to give us competitive advantage, because we know that employers here and overseas value that additional component to a degree programme.

The concept of promoting students participating in service learning is identified as alien, anti-intellectual, and “second-rate.” However, service learning might be made “acceptable” if it could provide the university with competitive advantages in the international tertiary marketplace. Market concerns prompt the extension of the disaster response into new “opportunities” for revenue streams, becoming a competitive advantage in the global tertiary market.

## CONCLUSION

While the earthquake disaster provided the impetus to engage in ethical questioning, the tensions exposed through focusing on the multiple and conflicting values attributed to CBL, prompted questioning about the ethics of promoting CBL in a disaster zone. The answer given by many was, “Why not?”.

Instead, I suggest CBL practitioners should question and help their students recognise issues around “Whose interests are served?”, “Who wins?” and “Who is left out?”, thus connecting CBL experiences to sites of struggle, whether in a disaster zone or not. Students involved in CBL should be guided to ask not, “How can we help these people?” but the harder question of “Why are conditions this way?” so that CBL does not become merely work experience, or an exercise in observing otherness, or even worse, a missionary expedition that is then marketed on the global stage. We all should consider the short- and long-term values of CBL, and about who CBL is for, questions that all CBL practitioners should address in their programmes.

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# Who Wins with Capstone Industry IT Projects?

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This paper looks at the benefits to the stakeholders involved in IT Capstone projects with industry. There is always belief that there is no such thing as a free lunch. The industry projects conducted within the Information Technology courses appear to contradict this belief especially for the clients. However, these clients do need to provide some of their time and in some cases other resources.

Over the years a lot of informal discussion has taken place focussing on who actually benefits from the industry capstone projects which students undertake as part of their final semester within the Bachelor of Information Technology. While the aim of this course is to provide work-ready employees who are useful to industry there is a feeling within the literature that students who graduate from tertiary institutes often do not have the ability to be productive without additional training (Murray, 2012).

Hodges and Burchell (2003) identifies that the attitude of the student plays an important part when determining the success of students once they enter the workforce. However, student attitude is very difficult to address without exposure to a workplace. Capstone industry projects can help in this context by placing the students into an environment similar to that they will eventually work in.

## AIMS AND METHODS

The aim of this piece of research is to clarify the benefits to each party involved in the IT Capstone Industry projects. This includes the technology transfer which occurs and, thus, the ability of all parties to be aware of, understand, and keep up with technological advances.

A literature review was carried out to look at previous research reported in this area. Industry partners, staff and students were all consulted to gather information about their perceptions as to the benefits of taking part in the Projects. Students and staff held debrief sessions during the project process. Each project consists of approximately three iterations, with debrief sessions held after each of these iterations.

A preliminary investigation has been conducted using a case study approach. A case study approach was chosen due to the small size of the sample (Creswell, 2002). In-depth interviews were conducted with each of the chosen Capstone project clients.

Three industry clients representing the broad range of Capstone project clients were chosen. The clients selected were 'Client S' from a small software business, 'Client G' from a large government department, and 'Client L' from a large private IT company. The interviews averaged 15 minutes each and were undertaken either face-to-face or over the telephone, and recorded in all cases. Some of the questions discussed were "Would they have done the projects if we were not available?" Exploring the use of the technologies and techniques used within the projects to see if they were new to the clients. We also asked about the client's perception of our students, including if they would do other projects using Whitireia students. These interviews were then transcribed and analysed.

The Capstone project debrief sessions provided additional insight into the student and staff perspectives of these projects. These debriefs are carried out each semester after each iteration of the projects and include all the staff who have been part of the projects. The topics discussed include such things as the success of the projects, technology and techniques used as well as the processes used to facilitate the running of the projects. During these debriefs, where we all meet face-to-face as a group, we identify any problems which need to be addressed both in the actual processes and the development of the courses. This guides us when deciding the material which is included in future courses.

## RESULTS

While the perceived benefits were different in each case, the general consensus was that all the stakeholders benefitted. The gains made by the industry clients varied depending on the type of industry they are engaged in. The benefits mentioned ranged from the implementation of new technology and learning new project processes, to gaining a new employee. Client G stated that they used a few of the pieces of software which the students produced while Client S said “we were planning on doing a smaller iPhone app project and because [of] you guys we did it for the Android as well”. Client L commented that he learnt a number of new processes due to undertaking the project.

Students are engaged and motivated when given authentic tasks in a realistic setting (Krause, 2006), they also benefit from projects designed to strengthen the skills they currently have (Keogh, Stirling, & Venables, 2007). The students gain by being given insight into the work environment, in some cases helping them choose which career path would be best for them. The Capstone projects enable students to include work experience and references in their CV's. Client S said “well we gain a student which is you know one of the developers so that was quite good” This client eventually provided the student with a job upon the completion of the Capstone Project.

The informal discussion documented from the debrief sessions indicates that the staff keep their knowledge up to date because of their exposure to the technologies and processes currently being used within industry. This in turn leads to the modification of the courses which are offered, especially in the area of the technologies used within the courses. The Institute gains through the ability to tailor the courses to keep up with current processes and technology using the knowledge gained by the staff from their exposure to the current working environment. Students gain as they study in an environment which is constantly adjusting to industry practice and finish their qualification with current skills and industry experience.

## DISCUSSION

Both the formal interviews and the informal discussion at the debrief sessions indicate that there is a benefit to all the stakeholders involved from the participation in the industry capstone projects. This is a pronounced effect within the field of Information Technology due to the rapid changes which take place within this industry. The transfer of these technologies and the knowledge connected with them is a two-way street. As Client S said “the big benefit of it was that it opened up that, that android idea. It made us realise that it's not that different and sort of taught us about the HTML5 being the way to go really”. The technology currently taught has been strongly influenced by the needs of the local industry. For example when government departments began using Dot Net, Whitireia started teaching it because the institute is within a city which contains a number of government departments. Simultaneously, mobile technology solutions were being incorporated into some courses, as it became apparent that industry were beginning to use them in the field.

In conclusion, the benefits to each party may be different but equally valuable. The clients benefitted from the exposure to different processes and technologies, which they may not have previously considered. The students benefit by the opportunity to work in a real-life environment, thus helping them to decide their future career path. The staff benefit through the opportunity to see how their subject areas fit into the whole, and allow them to ensure their knowledge base maintains relevance to current industry practice. The institute benefits by ensuring the courses they are offering are current and relevant.

The potential is that the emphasis on mutual benefit could be used to incorporate similar projects into other industries. This research strengthens the projects, as it gives strong evidence of the benefit to all participants, it will also help to market the projects to other parties. While there is still a great deal of research necessary to solidify our findings from this preliminary investigation, these findings do indicate that the benefit of the IT Capstone Industry projects far outweigh the time and effort necessary to run them.

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# Responding to Student Diversity: Strategies for Placing Work-Integrated Education Students

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Over the past decade universities have made increased use of Work-Integrated Learning (WIL), cooperative education, et cetera, as effective strategies to enhance student learning outcomes and to produce work and world-ready graduates (Cooper, Orrell, & Bowden, 2010; Dresser & Keeling, 2011). More recently the issue of equity and access to WIL activities for particular groups of disadvantaged students has been recognised in Australia as a significant challenge facing universities (Moore, Ferns & Peach, 2012; Patrick, Peach, Pocknee, Webb, Fletcher, & Pretto, 2009). This challenge is likely to continue, as universities respond to the government's 'knowledge economy' agenda, driven by policies focused on widening participation in higher education (DEEWR, 2009; Bradley, Noonan, Nugent, & Scales, 2008). The number of disadvantaged students entering university is expected to steadily increase (Norton, 2012), and universities need to be ready and able to respond.

Academics and professional staff at Macquarie University (MQ) report first-hand that students experience equity and access challenges in relation to WIL. Namely, that there are particular groups of students for whom it is difficult to find a placements or activities as part of a student's involvement in the university's Participation and Community Engagement (PACE) program.

## PARTICIPATION AND COMMUNITY ENGAGEMENT PROGRAM

The PACE program is designed to provide all students with an opportunity to engage with the community, to augment their classroom learning with practical experience, and prepare them for life beyond the university. Typically a student will undertake a placement or activity with a partner organisation for anywhere between 35 to 120 hours. As a general rule, academics and/or professional staff match students to partner organisations. Time, resources and an understanding of both the student and partner needs is required for this to be effectively carried out.

## THE 'DIFFICULT TO PLACE' STUDENT

In 2011, the subject of equity and access in PACE (or WIL) was identified at Macquarie University as an emerging issue in need of exploration. Approximately twenty PACE academics and professional staff, all with first-hand experience placing students with partners, came together to look at three basic questions:

1. Who were the students they found difficult to place?
2. Why were these particular students difficult to place?
3. What strategies were, or could be, used to assist staff with the task of finding suitable placements/activities for these specific groups of students?

The group worked in small teams of four to consider these questions. Data was captured and collated into a document by the present authors. Expert advice was also sought from MQ's Director of Equity and Diversity and the Manager of Health and Wellbeing Services. Equity practices in other areas of the university were also reviewed. These efforts culminated in the development of a resource, *Responding to student diversity: strategies for placing PACE students*<sup>1</sup>.

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<sup>1</sup> Resource can be found at [http://staff.mq.edu.au/teaching/curriculum\\_development/pace/resources/effective\\_curriculum/](http://staff.mq.edu.au/teaching/curriculum_development/pace/resources/effective_curriculum/)

## FINDINGS AND DISCUSSIONS

PACE academics and professional staff identified the following groups of students as potentially vulnerable in terms of equity and access to WIL: international students; employed students; students with carer responsibilities; students from low socio-economic backgrounds; students with disabilities; Indigenous students; and, students from regional or remote areas. These findings are in line with those also made by Patrick et al. (2009, p. 24-28). The PACE staff further identified a number of additional student groups, rarely mentioned in the literature, who also present a challenge in relation to the organisation of WIL type activities (refer to Table 1). Overall these results suggest to the present authors that there are two distinct groups of students who can be 'difficult to place', namely the 'visible' students and the 'invisible' students. The needs of the first group of students are obvious or "visible" to staff and can often be factored into the process of planning and matching students to partners. The needs of the second, and often much larger, group of students however are less evident and are therefore unlikely to be considered (Table 1).

*Table 1: 'Visible' and 'Invisible' Students in WIL.*

| <b>'Visible' students</b>   |   |
|---|---|
| International students  | Students with obvious physical impairments/ disabilities  |
| Indigenous students   |   |
| <b>'Invisible' students</b>                                       |   |
| Students with carer responsibilities                              | Employed students   |
| Students from low socio-economic backgrounds                      | Students with a mental illness  |
| Students from regional or remote locations                        | Students with financial restrictions  |
| Students with disciplinary flags against their name               | Students with time restrictions   |
| Students with low GPAs  | Students who lack certain skills / experience / 'world view'  |
| Students with low motivation                                      |   |
| Students who lack a clear view / do not know what they want to do | 100 level (first year) students with limited theoretical/foundational knowledge                             |
| Students with a criminal record                                   | Students who are unwilling to travel or to travel to particular destinations                                |
| 'Alternative' students who do not present or interview well       | Shy students  |
| Uncompromising student who refuse to undertake certain placements | 'Indigo children' or 'entitlement/princess syndrome' – students who are choosy, demanding, inflexible, etc. |
|   | Incarcerated students   |

In the development of strategies to support difficult to place students, a common concern voiced by PACE academics was 'if I can't see it and don't know about it, how can I be expected to address it?' The process of matching students to placements becomes difficult when staff are unaware of a student's individual needs. This issue gives rise to the contentious matter of disclosure. A student is not obligated to disclose private matters related to their health, personal circumstances, et cetera, however these invisible needs leave staff with less, or in fact no, opportunity to account for when then finding a suitable placement. Instead staff can be left to 'clean up' placements that go wrong.

The matter of disclosure is further complicated by the tension academics and professional staff experience in relation to their duty of care toward both students and partners, and the need to balance a range of legal obligations and unit requirements, while at the same time ensuring the reputation of the university is upheld and partner relations maintained. This delicate balance can be jeopardised when problems arise during the

placement that may have been avoidable, had the student disclosed their specific needs. Additional time and effort is often required to manage these situations, but of more significance is the broad range of negative consequences that may then be experienced by the student, partner and university. No single answer was arrived at to deal with the complexity of disclosure, privacy and duty of care. The *Responding to student diversity: strategies for placing PACE students* resource recommends staff promote an environment of disclosure with their students, and advice students of support services available to them, and when to access these services so that the necessary support can be provided. Many of the specific strategies presented in the resource relate to the preparation of both students and workplace supervisors prior to placement as well as support mechanisms for use during the placement. This approach both underpins the university's duty of care to students and partners, and highlights the necessity to incorporate 'risk mitigation' strategies to prevent, minimise and deal with problems that inevitably arise when placing students with partners.

Academics and staff involved in placing students are cautious not to 'problematise' particular groups of students or position the issue of student equity and access in WIL within a 'deficit thinking' framework (Hocking, 2010). From a pragmatic perspective this approach is unhelpful in terms of tackling the issues raised in this paper and does not account for any 'external' factors, separate to the student, which can influence the placement process. One such factor described by staff is 'partner push back', where a partner expresses a preference for a particular type of student to the exclusion of all others. Partner 'push back' may relate to a student's academic performance, nationality, appearance, disposition, et cetera and can complicate the task of finding suitable placements for every student in a cohort. Strategies developed in the resource, illustrate an emphasis on flexible practices as a way to meet the diverse range of student needs:

- the use of teams or 'split' projects (i.e., into small units of work) may assist to meet the needs of students lacking certain skills, experience or 'world view';
- the use of virtual placements/projects for students with mobility impairments or those who have time, location and/or financial restrictions; and
- the use of on-campus placements for 'high risk' students such as those with disciplinary issues.

The adoption of a more flexible approach to how a placement is designed and offered may ease challenges like 'partner push back', along with many other factors that make finding a placement for all students a complex activity.

## CONCLUSIONS AND IMPLICATION

Finding the right match between a student and partner organisation is a key factor in the organisation, and ultimate success, of any WIL experience. It can be a demanding process, particularly when some groups of students present challenges, making it more difficult to find appropriate placements. It is important to consider the requirements, limitations and preferences of all stakeholders, and for universities and workplaces to work toward ensuring there are strategies and mechanisms in place to accommodate the diverse needs of their student population.

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# Practical Migration Training Program: Increasing Awareness and Enhancing Employability

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In the last five years, momentum to improve the professional image and quality of work of Australian Migration Agents has been led by concerned consumer groups representing disgruntled migrants. One result of concerns about the quality of the profession is that the Australian Federal Government has become responsible for the management of the migration agent profession and for the accreditation of Migration Agents. The accreditation of agents is managed by the Office of the Migration Agents Registration Authority (MARA) which is attached to the Department of Immigration and Citizenship. MARA's functions are set out in s316 of the *Migration Act 1958* (the Act) (MARA, 2013a). As a part of a Review of Statutory Self-Regulation of the Migration Advice Profession (2007-08), changes were recommended to the regulation of the migration agents. Since 2009, MARA has dealt with complaints in the industry and has promoted consumer and agent awareness of rights and responsibilities. MARA works to improve the quality of the Migration Agent industry with a focus on 'suitable persons' requiring registration to work in the field. This requirement aims to ensure that agents have proper levels of knowledge to give pertinent and accurate advice.

## GRADUATE CERTIFICATE OF AUSTRALIAN IMMIGRATION LAW AND PRACTICE

As part of their quality framework for registration and to guide decision making in exercising their sanction powers, MARA has developed competencies for agents that are both skills based and professional. MARA expects that existing and new migration agents will be able to demonstrate these competencies to a professional standard. All Migration Agents must complete the Graduate Certificate of Australian Immigration Law and Practice (GCAILP) as one of the mandatory requirements for registration as a Migration Agent. The Graduate Certificate of Australian Immigration Law and Practice develops students' understanding of Australian immigration law and practice. Successful completion of the appropriate combination of units and national common and invigilated assessment tasks means that students are eligible to practice as a registered Migration Agent. At Victoria University (VU), this course is taught by leading experts in Australian immigration law, including Law Institute of Victoria accredited specialist lawyers, the former head of the Refugee Review Tribunal and a Senior Magistrate. While the currency and expertise of teaching staff is of value to students, these course features do not inherently develop students' actual skills. Until 2010, while skills-based tasks were incorporated into an activity-rich curriculum taught by practising Migration Agents, there remained insufficient opportunity for students to develop skills, a working knowledge and an appreciation of the pressures of working as a Migration Agent.

There was a need to bring completely authentic Migration Agent learning activities into the curriculum – due in part to the high numbers of graduating Migration Agents intending to work in sole practice. Teaching staff delivering the course at VU became concerned that, despite passing both the Graduate Certificate and the requirements of MARA, recent graduates entering the migration industry could yet find themselves in a dilemma. How does a Migration Agent develop the required practical competencies that have been developed as a continuum: from obtaining instructions from a new client to managing applications on behalf of clients, through to appeals and managing a service delivery business professionally? Is there a limit on how practice-ready graduates can be to take on the responsibility of providing legal advice in a complex and specialised legal area?

This discussion examines the option of a work placement component in the Graduate Certificate of Australian Immigration Law and Practice. The placement provides students in the unit Australian Immigration Law and Practice an chance to integrate academic and skills-based learning with practical experience in a supported work environment. VU works closely with Migration Agencies to ensure that learners are supported by an

experienced Migration Agent who creates a safe environment for novice practical learning. The discussion will examine key teaching and learning activities in the Graduate Certificate to show how integral the work placement is to preparing graduates who can demonstrate practical skills informed by appropriate law. The discussions will draw on general analysis of student reflections of Work-Integrated Learning as well as a generalised analysis of student evaluations.

#### PRACTICAL MIGRATION TRAINING PROGRAM: WORK PLACEMENT WITH A MIGRATION AGENT

The benefits of students undertaking some of their learning for particular professions and industries in the workplace have been well documented over decades. More recently, the comprehensive ALTC *WIL Report* notes the value of WIL (Work-Integrated Education) as a valid pedagogy, a way to both develop work-ready graduates and students' professional knowledge and skills (Patrick, Peach, Pocknee, Webb, Fletcher & Pretto, 2008). WIL has become quite a broad "umbrella term for a range of approaches and strategies that integrate theory with the practice of work within a purposefully designed curriculum" (Patrick et al., 2008, p. iv). WIL placement is a narrower teaching approach and the student must be situated in a workplace – not doing a project for a work place or working through case studies developed with industry or networking with industry people – but physically in the cut and thrust of a work place actually doing, ideally in a highly scaffolded and supported way, work typical of that profession. Migration Agents need to have a deep working knowledge across a relatively narrow area of law. They also need to have a sense of the context of migration, the quality assurance, and administrative requirements of government as well as the operational workings of the office environment. In the case of a narrow profession, the additional benefits of working specifically in a Migration Agent's office and undertaking that work are numerous. The general benefits of workplace learning that apply to Migration Agent students who have done work placement include – as they do (in theory at least) for all WIL – the opportunity to put theory into practice, the chance to work through processes in real time rather than just knowing about them and the linking of academic theory with on-the-job training.

More pertinent to people expecting to work as professionals with a huge amount of responsibility in the Migration field, Practical Migration Training Program (PMTTP), students have the opportunity to experience 'real' migration inquiries in all of their complexity. Students are expected to observe and support the necessary processes involved in migration cases (for example, they must always make sure that a client signs acknowledgment of receipt of all documents), they see the various competencies expected by MARA modelled in 'action' as distinct from merely reading or discussing the required competencies that an agent should have. Typical of most WIL, placement with a Migration Agent provides students with more depth of knowledge because they work with real examples and are supported to explore aspects of each case with help from their supervisor. Even working through a day as a migration agent – from the simplest of tasks to very complicated ones – provides a sense of the range of knowledge an agent is required to have. Exposure to that range of knowledge helps students to identify their weaknesses or areas for future development. Placement students also have the opportunity to build a support and mentor network.

While there could be a range of benefits to work placement, learning in real workplaces also involves some risks that need to be mitigated and managed: resources are needed to ensure quality in this respect. Especially as far as professionalism and the observance of Codes of Conduct and good work practices, there is an assumption or expectation that a Migration Agent who accepts a student into their business has the 'right' competencies – principally because they are registered and do not appear on the MARA's List of Sanctioned Agents (MARA, 2013b). Unless an agent has been sanctioned, we must assume they are good role model for the student; however, placement students could pick up bad habits and not all migration agents have exemplary work practices. VU introduced the practice of interviewing each placement employer and set eligibility criteria beyond merely being a registered agent including practice in a retail shop front, employment of a minimum of four staff and a minimum of five years of practice. VU is also in the process of registering the act of supervision as a Continuing Professional Development activity that requires assessment. All migration agents must earn points as part of their on-going reregistration requirements.

More controversially, and in the context of a recent report commissioned by the Office of the Fair Work Ombudsman that examined work placements – *The Nature, Prevalence and Regulation of Unpaid Work Experience, Internships & Trial Periods in Australia: experience or exploitation* (Stewart & Owens, 2013) – the Migration Training Placement Program is not paid. It is optional over two weeks and replaces three of the five assessment tasks that

all students need to undertake in the unit Applied Migration Law and Practice. Stewart and Owens' report (2013) presents a snapshot of types of unpaid work in Australia and suggests that unpaid work in Australia presents "a serious legal, practical and policy challenge" (p. xi). However, the placement tasks have been mapped to classroom tasks to ensure they are aligned to learning outcomes. Presently between 18% - 28% students opt to do placement and PMTP constitutes work placement for the purpose of a formal education or training course. The PMTP is relatively new and VU is still working through a range of issues to assure the learning in each placement. VU Immigration Law academics have raised questions about how to ensure that students are happy with their placement? That they are not intimidated to speak out if not satisfied? Knowing that much WIL research has focused on the patchy nature of supervision in the workplace, how can the supervision of students be assured? The exclusive nature of the program is also a concern. As is the case with many WIL opportunities (Patrick et al, 2008), PMTP is selective and not available to all students. How students are selected depends on the organisation and VU cannot guarantee the objectivity of the selection process. To date, however, all students who have applied for placement have been offered a place.

### FINDINGS

Student evaluations and reflections stress that a major benefit of placement in a Migration Agent organisation is that it provides an opportunity for students to connect the 'dots' between academic learning, practical training and other more nebulous professional qualities which cannot be easily taught but which are nevertheless vital in a profession that is both legalistic and highly emotive. The confidence of students during and after placement is mostly positive, but can also be negative. Student feedback on the PMTP said it was a "fantastic experience", allowed them to apply their skills and knowledge in a supported environment and exposed them to "key but basic" operational aspects in the field. Students believe placement gives them an edge in applying for positions as Migration Agents and a good networking opportunity. Student testimonials noted that the chance "to experience the practical side of being a migration agent [and] being exposed to real-life situations and their solutions ties well to the legal framework taught by VU" – such as "writing submission for visa applications", "being able to engage with real clients and writing letters". PMTP helps with transition to "the real world". Some students commented that they were made to feel part of a team. One student commented that there were two workers who "were always on tap to offer support, advice and guidance when needed". Such support is crucial.

Many Migration Agents see their participation in the PMTP as a way of "giving something back" and as a way of demonstrating leadership in the industry. One employer also commented that having students in the work place offered a reason for staff to develop mentoring skills. Mentoring, then, is another skill set that is vital for professionalism in the industry. Established agents seem to value teaching new agents. Five employers responded to an online survey evaluating the PMTP in 2012. All employers found having students undertaking PMTP was valuable for a range of reasons including because:

- students undertook work and did it well;
- students contributed to the pool of knowledge of the organisation;
- it is a "good eye opener" for students; and
- it has the potential to contribute to increase professionalism in the industry.

One employer said that work placement should be compulsory, partly due to the complexity of laws in the field:

it is not viable for a student who has never been exposed to this industry to simply undertake the course then be able to register and run their own business.

All in all, employers thought PMTP contributed to the professionalism of the industry.

### CONCLUSION

When work placements succeed, they can inspire Migration Agent students, connecting up the law, processes and the reason that the industry exists. As one student enthused: "One day, I got to write a letter of congratulations which really made me excited and made me understand how important this field is that I am entering – especially to the lives of clients." Migration Agents need to be able to interact with a diverse range of

people. They need to be sensitive, have a firm legal understanding of a complex field and they need to be able to run a business if they are planning on going solo. The argument for mandatory WIL has been made a range of educational programs; feedback from students and employers suggests that placement for Migration Agents should not be optional.

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# Lecturers Active in the ICT Industry: A Mutually Beneficial Relationship

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There are both benefits and challenges for a lecturer involved in an academic/industry dual role within the Information and Communications Technology (ICT) industry. This paper discusses a case study where an educator who is actively working in the ICT industry while undertaking a role as ICT lecturer.

Benefits and challenges of a dual role are explored, and include: student engagement, opportunities for students to obtain industry experience, on-going professional development and time management.

This paper also discusses the potential of a mutually beneficial relationship between all stakeholders: Students, Lecturers, the ICT industry, and the Institutes of Technology and Polytechnic (ITP) (Figure 1).

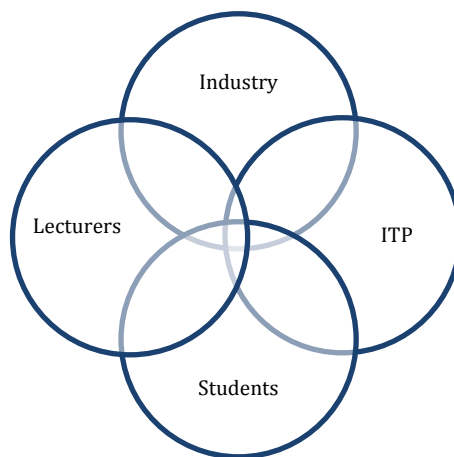


Figure 1: Academic and industry dual role stakeholders.

## BACKGROUND

There has been much debate around practitioner versus academic evaluation of tertiary students.

The balance between academic and industry evaluation may reflect the natural tension between the processes and priorities of the academic world and the pragmatism and priorities of the corporate/industry environment. Jacob, Hellström, Adler and Norrgren (2000) broaden this concept beyond issues within cooperative education to long-term partnerships now necessary between academia and industry in the knowledge society. (Skelton, 2006, p. 54).

This discussion of the current and ideal industry assessment methods may allow synergies and move towards a cooperative framework for ideal industry assessment techniques and priorities. (Skelton, 2006, p. 58).

The practitioner and academic dual role creates a synergy by bringing industry into the classroom. A term coined by the health sector describes the practitioner / academic dual role as a 'Pracademic' (Volpe & Chandler, 1999). Pracademics are academics that practice what they preach, while resolving conflict and maintaining a middle ground between industry and academic. The term 'pracademic' is also applicable to the ICT sector and is

being upheld by teaching academics active in industry, who are implementing industry knowledge into the teaching and evaluation of students.

## DISCUSSION

Pracademics create relationships and increase communications between stakeholders, while providing an engaging environment for students.

### *Beneficial relationships*

For the lecturer, benefits have been found to include an improved technical ability and increased confidence in the classroom. The hands-on experience of local industry improves the lecturers' current ICT knowledge. It also provides material for case studies and ideas for projects which has resulted in improved quality and industrial relevance of teaching material. Ahmad and Rashid (2011) describe this in their case study:

I gained invaluable experience and knowledge in various aspects ... which contributed significantly to my routine works involving teaching and learning processes. Knowledge and information sharing with my colleagues and students are greatly enhanced. My level of confidence in dealing with my job is also improved. (p. 283)

For a lecturer, a role in industry not only improves teaching ability, but the lecturer may also experience the prosperous situation of being surrounded by experts in the ICT field within the ITP. Collectively, academic colleagues are a vast and varied resource and will often offer personal knowledge and experience into industry projects when approached.

Academic colleagues also benefit from the experiences and industry stories which colleagues in industry share. Industry stories have provided interesting case studies for ethical debates, project management scenarios and systems analysis and design case studies. This benefits the entire ITP through knowledge sharing.

At the Eastern Institute of Technology there are a few ICT pracademics within the School of Computing. On discussion of the academic versus practitioner debate each agree they have been able to integrate their own work place learning with university learning (Paku & Lay, 2009) and improve the delivery of courses using a blend of academic/practitioner experience, as agreed by one lecturer:

Advantages regarding my experience in industry consultation:

- Observe technology usage;
- Maintain currency with industry;
- Broadens scope in knowledge transfer for students; and
- Opens up paths for student internships. (Lecturer A)

For the student, benefits may include engaging class discussions of industry projects that are relevant to the subject matter. The intent of these examples is to demonstrate a direct link between industry application and academic curriculum, and therefore bringing industry into the classroom.

Example 1 - Website development - students evaluated a website which had been designed and developed a few years prior, and was in need of redevelopment. Students were encouraged to give constructive critiques and propose new ideas for the redevelopment of the website. The owner of the company was invited into the classroom, where the students were able to discuss user requirements for the redevelopment.

As part of their assessment students were to plan and develop a website. A number of students chose to redevelop this particular website. They took into consideration the information they had gathered from the client, and were able to continue communications with the client throughout their assessment. This introduced the students who were in the first year of studies of the Bachelor of Computing Systems to concepts such as user requirements, communications, and standards for real world applications.

Example 2 – Systems overview – included in-depth discussions of the methodologies that were implemented to produce a set of custom software solutions. The project phases were linked to the steps of a systems

development life cycle, and students were able to ask questions about the process. Because of the lecturers knowledge on the practical application of the theory being delivered to students, the class was more enjoyable to teach, and feedback from students was positive.

When students were asked how lecturers who are up-to-date and/or active within the ICT industry impact on your learning experience? The following student responses were received:

Without the input of industry stories, I don't think we would get the course material as good as we do. The explanations given to me by tutors have definitely made an impact on how I view the industry. (Student A)

When lectures relate things back to basic everyday life and experiences makes the class more enjoyable. (Student B)

Another benefit to students is the opportunity to be involved in industry projects. Projects provide a real world experience during the course of their study, with the guidance of a pracademic who can assist with linking academic material to the industry project.

Example 3 - In 2012 two students were contracted to program custom applications. These applications added extra functionality into the MYOB (Mind Your Own Business accounting package) user interface. The students were introduced to the project at the development stage of the systems development lifecycle, and they created the software based on the user requirements document, which was created by a third party.

Students learned varying skills including the database structure behind a complex accounting system, the necessity of duplicating business rules when bypassing an existing system and user interface design.

The project was initially defined to be a simple application. However, the user requirements of the applications changed resulting in scope creep. Students gained a significant amount of learning in project management, and this was shown in their feedback. Some examples of this feedback includes:

Working on this project has taught me a lot about how important the planning phase is of a projects life cycle. A quote that I can now appreciate from my experience would be from Brian Tracy. 'Every minute you spend in planning saves 10 minutes in execution; this gives you a 1000 per cent Return on Energy!' (Tracy, 2010)

I believe I have improved in my ability to work within a team environment. Achieving targets/goals as a team is important I found, but can be difficult due to scope creep or unseen difficulties throughout the development life cycle. I also discovered how databases and database technologies can be used within applications to process and store data effectively. Also I improved my understanding of SQL which has helped further my studies at EIT. While the project was tough it was well worth it. This project has taught me the importance of planning, my ability to cooperate within a team and has increased my knowledge about various technologies. The project has had a positive outcome for me as the real world experience has given me a glimpse into how the IT industry really works. (Student C)

It was useful seeing how databases are used in the real world. This allowed me to link the theory with the real use cases. Following a database structure which was already created was a different way to look at databases then in class where we created our own databases. During process of building the application it was reinforced how important it to write code which is flexible to be changed or in the future it would be much harder to change. What was also reinforced was to need to make the application respond different scenarios which could happen in the real world but are not thought of when this are expected to work perfectly. This makes it important to have a good testing of the application which included creating data to make sure the application keeps running. (Student D)

This feedback indicates that the students were able to integrate their knowledge from ITP with their learning in the workplace and vice versa. Paku and Lay (2009) confirmed in their study of work integrated learning, that some students reported enhanced skills and knowledge through the integration of knowledge in workplace and university.

Industry also benefits from the pracademics' academic nature through the implementation of researched and proven methodologies (Ahmad & Rashid, 2011) which apply directly to their industry. With a closer link to local industry at 'the coal face' of tertiary education the gap between practitioner and academic (Belli, 2010) is bridged. Pracademics appear to directly influence the next generation of ICT graduates, benefiting industry by providing work ready graduates.

For the institute of technology/polytechnic a main benefit is employing staff members who meet the organizational requirements for the role. A lecturer who is active in industry and uses this experience in the classroom may meet the following requirements of the job description; improving students learning by (a) embedding industry projects into class case studies and (b) students have the opportunity to be involved with current industry projects. The increased knowledge of current ICT job requirements within industry assists with curriculum development due to current experience in the market. Professional development objectives are obtained via extending ICT abilities within industry keeps a lecturer current, and increases the lecturer's confidence in course materials, and may therefore be a more engaging educator.

#### *It's not all benefits*

The purpose of this paper is not to suggest that academics all drop a day of face-to-face teaching and go out into industry. This combination of roles is not for everyone, and certainly does have its drawbacks. Occasional 80 hour working weeks result in: late nights, working weekends and increased stress. Time management becomes absolutely crucial and daily life becomes a project management task, as noted by one lecturer..

Disadvantages regarding my experience in industry consultation:

- Decreased time to accommodate the academic needs and workload (5 day week in 4 days);
- Travel costs; and
- Only select information regarding the external organisations can be disclosed. (Lecturer 1)

#### CONCLUSION

There are benefits for both industry stakeholders and to academics from the dual role that many academics involved in cooperative education. Academics in an industry-academic dual role-play the part of a correspondent by sharing knowledge and information freely between stakeholders; thus impacting the learning of students, lecturers and industry representatives. They are in a position to gain experience from industry and from academic colleagues. This allows them in turn to be able to deliver this 'pracademic' blend into classes to engage students, creating a more enjoyable learning and teaching environment. Industry also benefits from not only a single contractors expertise, but are also able to draw from the vast knowledge range of experts in the field that have chosen an academic career. It is this constant flow of information between the stakeholders that appears to make this relationship ultimately beneficial.

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# Is this my Internship or my First Job? High Performance Intern Issues

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This paper explores the attributes of high achieving students and interns who are increasingly being offered permanent employment and appointed into job positions before their official internship is completed. This issue of early career starts affects a variety of internship, work experience and capstone programmes in tertiary institutions throughout New Zealand. Some examples are provided in this paper from the Bachelor of Computing Systems programme at the Eastern Institute of Technology (EIT).

Some of the issues around internships and industry projects becoming synonymous with fully paid jobs include payment, student support, fees, and academic supervision. The success factors leading to the students performing at a high level in the academic and work environment are also discussed. The paper discusses issues around interns being appointed into career graduate job positions with a salary while still studying and undertaking internship duties. These issues include supervision of the student while they hold commercial responsibilities, the potential redundancy of the internship itself and the categorisation of the student while in this multiple purpose position.

While early transition into fulltime paid employment is a positive outcome for students and their tertiary institutions, there may be implications for work-integrated programmes and qualifications stemming from these high performance students.

## TOPICAL NATURE OF THIS ISSUE

Research around the area of high achieving students within applied bachelor degrees can contribute to the examination of this phenomenon. Highly motivated students will normally translate those motivations and achievement from pure academic achievement into more real-world cooperative education experiences. However, there may be some students who are able to achieve at a top level in academic subjects but are unable to translate this into an internship or first job experience. Some studies have examined the causes of early graduate job entry success and have cited personal qualities and verbal interviewing abilities as indicators (Silvester, 2011). However, it would be useful for the cooperative educational community to know the proportion of interns who are also serving as full-time employees.

“There is not a sole criterion such as grades and job experience that companies seek in their internship candidates. One commonly sought-after trait for all interns is a winning attitude; because attitude is the key to success ... it gauges an intern’s motivation, energy, and leadership potential” (Coco, 2000, p. 1). Larger companies who recruit interns on a structured basis often pay their interns a stipend but normally appoint a proportion of those interns who have ‘made the cut’ as employees at the end of the internship period (Smith, 2012).

Gault, Leach, and Duey (2010) confirmed in their study that more full-time jobs were achieved by students with internship experience, including the finding that top students were achieving higher salaries in their appointments. The research literature in the field of success may also hold keys for student performance in the areas of personal management, goal setting and productivity – personal development training which is difficult to teach in a typical university or polytechnic environment. The ability of students to build their professional identity in relation to their workplace and field of work (Campbell, 2010) is also likely to provide indicators for securing early employment alongside an internship.

## INTERNSHIP/EMPLOYMENT CASES

Three Information Technology (IT) degree students at the Eastern Institute of Technology were asked to provide feedback on their experiences leading to their internship and job appointment. The first high achieving student secured a pre-internship experience in the summer holidays six months before her actual (for credit) internship began.

As the employer had already experienced her work, when this intern began her actual internship she was appointed into a permanent position within the first three weeks. She commented that:

I felt that the two months of voluntary work that I undertook gave me an opportunity to produce work that was at least at graduate level. The company did invite me to return 6 months later and take on the role as full-time Project Manager. This coincided with the start of my internship. (Student1)

In another case, a final year IT student applied for several internship placements, while at the same time applying for actual job vacancies as a software developer. He was interviewed for an advertised job, sat a practical test verifying his real-world abilities and was appointed on the first day of his internship as a junior software developer for the company. He commented that:

Out of this paper (final project/internship), I have gained a qualification, and this has motivated me to gain full time employment at Company2 where I completed the internship/project. (Student2)

A third example saw the student travel to another city, apply for jobs and internship openings and secure limited term contract employment for the start of their internship period.

These students pursued potential internship sponsors or employers some time before their official internship starting date. Student2 actually applied for advertised jobs as well as approaching organisations for unpaid internships. Student1 organised an unofficial pre-internship and impressed their employer to the extent that they were invited back to not only start as an intern but also as an employee. This type of early employment is probably only achievable for high performance students with good confidence and interviewing skills.

What were some of the common attributes of these students who secured employment simultaneously with their internship? Seemingly obvious indicators for students who achieve early jobs alongside their internships are the achievement of high grades across their entire degree studies. The three students cited in this article achieved A level grades (85% or above) in over 80% of their three years of degree study. Future analysis could be conversely focussed on all students achieving at this level academically then examining their internship or first job success levels. Another shared characteristic for these three students was an advanced level of personal qualities including a positive attitude, highly developed verbal and written communication skills, and an engaging personality along with a strong motivating drive. The students also communicated with the EIT projects coordinator, worked on their goals and pursued industry contacts for several months before the start date of their internship. In terms of technical skills, Student1 and Student3 could be described as generalists and all-rounders in their field of IT, however Student2 had strong software development skills which were necessary for his appointment.

## DISCUSSION AND ARGUMENT

By evaluating the experiences of internship students who have achieved at a top level throughout their degree studies, managed to secure a high value internship and secured employment while undertaking the internship, we may better understand the factors for this kind of success. The concept of self-development and how students are progressing on a personal and professional journey through an uncertain employment environment challenges academics in their supervision and advice to their students (Trede, 2012).

This examination also takes into account the potential conflicts of interest where students do simultaneously begin permanent employment while undertaking internship academic obligations to complete their degree. This kind of employment may not be desirable or achievable as an aim for the majority of students; however, it may motivate many students to achieve at a higher level within their academic work and in their cooperative experiences.

There will be limitations for this level of achievement and paid employment alongside their internship for international students who are only permitted to work for 20 hours per week. There may also be limitations for certain types of Studylink student support/loans while working full-time. The need for intense academic supervision may not be as necessary when high achieving students are obviously succeeding in a graduate-level job while undertaking their internship. One German University faculty group visiting EIT recently discussed how their interns are entirely unsupervised during their sixth semester industry internship.

#### CONCLUSIONS AND IMPLICATIONS

An increasing number of high performance students are gaining employment at the start of their internships, or at least working in paid employment in their field concurrently with their internships/final projects. While this is a positive outcome for these students, it may require a different approach to academic supervision and goal setting for final year students generally. An examination of the academic achievements of Bachelor of Computing students at EIT indicates that all students who were employed while undertaking their internships had achieved almost straight A grades throughout their degree, and had developed mature personal communication qualities.

If top students are securing their first jobs at the beginning of their internship then what value does the internship experience still offer? Internships for high performance students may still be useful as goals and motivators for students regardless of students 'jumping the gun'. Academic supervision may need to prove that value is being added to the student employee, or other options could be explored including allowing academic cooperative reports to be completed after the internship period.

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# Practitioner Heuristics: Adapting Student to Co-op Placement

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When people make efficient decisions that ignore some information or cues, they use their natural, intuitive ability to employ heuristics. The effectiveness of heuristics depends on the appropriateness to a given context. Heuristics reduce effort; they do not provide guidelines for reaching a goal. Heuristics do not indicate causality. People exposed to informational cues make a decision that often appears simple, automatic, and results in a seemingly mindless response. These decision heuristics, based on experience, save cognitive processing time (Gigerenzer & Brighton, 2009). Heuristics and biases go hand-in-hand. Incompetent decisions may occur when biases intervene, caused by application within an inappropriate context (Tversky & Kahneman, 1974). We find a similar concept with Weick's tool-dropping wherein he propositions the need to drop the outmoded aspects of our theories and adapt our heuristics to the new, ever changing and disruptive environment (Weick, 2007).

Armstrong and colleagues (1994, 1996, 2007) researched the Boston Consulting Group (BCG) heuristic and provided evidence that the BCG heuristic influences incompetent decision-making; decision-makers reduced profit in order to beat the competition when biased with market share information.

The research reported here includes remedial tools to overcome these biases. These tools include using heuristics tools (Gigerenzer, 1999) and tool-dropping methods (Weick, 2007) for training competent decision-making in environments of dynamic complexity (Senge, 1990; Simon, 1956).

## METHOD

This paper summarises salient results from a study of ten hypotheses developed to test propositions from the tool-dropping work of Karl Weick (2007) and heuristics work of Gerd Gigerenzer (1999). The experiment series includes ten studies with one scenario throughout, but six mutually exclusive bias-laden primes and four controls. The effect of these primes was tested for the hypothesised result of a selected price upon market-share, readings about the BCG grid, or readings about tool-dropping. The single dependent variable is executive competence, measured by participant selection of either a high price profitable for competence determination, or a low-price unprofitable for incompetence determination. The strength of association summarised through the chi-square statistic takes into account sample size and degrees of freedom, along with significance testing using frequency ratios.

## UNIT OF ANALYSIS AND SAMPLE

Practicing executives and tertiary business students are the unit of analysis. The sample of this study came from three universities with worldwide cultural representation in their student bodies: Auckland University of Technology, Auckland, New Zealand; San Francisco State and San Jose State Universities, both from California, USA. The representative practitioner sample was taken from North America and Australasia.

## SUMMARY OF SIGNIFICANT FINDINGS

The results of this research show that good decision-making can be taught, or trained, in business schools. In particular, the first hypotheses concerning market share and competitive focus confirm and update the research findings of Armstrong and colleagues (1994, 1996, 2007) and consistently show that competitive information, and the BCG matrix in particular, continues to train for incompetence. Comparing the shares of subjects selecting the incompetent decision indicates a significant increase in incompetency over three levels of increasing emphasis on

market share strategies (.30% to .39% to .54%,  $F = 3.347$ ,  $p < .038$ ,  $\eta^2 = .041$ ). The analysis indicates a significant trend; as incompetency primes increase, shares of subjects selecting the incompetent decision increases.

Weick's Hypothesis 4 reveals the most critical extension of this work. In this study participants initially exposed to the competitive focus but then shown the folly of such a focus by exposure to a reading drawn from the extant marketing literature. The level of incompetent decisions immediately falls significantly. The proportion of incompetent decisions drops from the control of Scenario 2 (chi-square = 7.898,  $df = 3$ ,  $p < .048$ ,  $\phi = .187$ ). This is a focal finding, showing that competency can be trained.

The entire research report is available from the authors upon request.

## CONCLUSIONS

This research suggests that participative teaching, where teachers can lead students through heuristics and tool-dropping processes within real-life case study settings, are a more superior method of training than lectures or guided reading. Simply reading about decision-making techniques does not assist students to learn and apply those techniques in a sensible manner. Finally, a tool-dropping sensibility brings competency to the decision-making process. Students need a tool-kit of management heuristics tools, however they also need training to determine when to drop tools and let simple heuristics determine the most useful tool to use within a particular decision environment (Weick, 2007).

## IMPLICATIONS

The results of this research present evidence to show that competent decision-making training works in business schools. The lessons learned from this study were applied in an undergraduate, upper-division marketing strategy class. Students, throughout a twelve-week semester trained on a computer simulation (using Mikes Bikes™) whilst analysing business case studies and numerous business decision-making heuristics. These non-deterministic heuristics included Porters Five Forces (Porter, 2008), Blue Ocean Strategy (Kim & Mauborgne, 2004), and The Balanced Score Card (Kaplan & Norton, 1996). Students were trained to adapt to these matrix models using heuristics with environmentally sensitive tool-dropping. They adapted the heuristic cues to a particular context and dropped the irrelevant aspects. As they advanced through the Mikes Bikes computer simulation they applied the non-deterministic heuristics to their decision-making. Students train to rely on their intuition like practitioners, by focusing on salient cues and dropping unnecessary or irrelevant cues as they synthesise future options for their simulated business.

Ultimately, after these simulation and case study exercises, students demonstrate practitioner knowledge-how to adapt to a wide range of strategy decision-making heuristics within an ever-evolving environment. One undergraduate student, in an unsolicited letter, expressed an example of this successful adaptation and Work-Integrated Education skills competency acquired from training in-class. These competencies include communication, customer relationship management, and self-sufficiency (Martin & Hughes, 2009).

## STUDENT TESTIMONIAL FROM UNDERGRADUATE MARKETING STRATEGY CLASS

I am currently doing my co-op placement, but first I just say at how my mind is absolutely blown at the level of applicability of everything I have learnt in our [Marketing Strategy] class to the real world. The [MikesBikes, Smartsims] simulation combined with the journals has really enhanced the way I see the bigger picture and back it up with the analytical side. I was so surprised to find that the company I am doing [work] for had no structures in place whatsoever when it comes to measuring company performance; especially when the company looked so successful on the outside. On the second day of my [work] placement I managed to sell Kaplan's Balanced Score Card to the CFO and the CEO of the company; through the use of [heuristics] but also, because the simulation has put me in the seat of the CEO, I was able to talk in their language by using jargon that was music to their ears. And only after hours of going through data and speaking with front line managers, I found, that this company is going through some of the devastating decisions we made on the [MikesBikes] simulation; for example, no vision, promotional abuse and mismanagement of customer loyalty. I have also recommended this paper to all my friends doing Marketing as a MUST DO [upper division] PAPER. Another thing I found about this paper is that

it correlates perfectly with my other major in management. I really can't imagine how I would be able to sell my management theories and ideas alone; but with the use of the Balance Score Card for example, I would be able to show the implications and/or justify the benefits of those management theories/ideas by relating it to marketing decisions and pin pointing it on where it affected company results. (Unsolicited personal email received from undergraduate student, 2012)

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# Reflections of ICT Capstone Projects: Paving the Way for Future Students

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Industry based capstone projects or work experience components are a common part of many New Zealand Information and Communications Technology (ICT) related bachelor degree programmes (Bridgeman, 2008; Cleland, Snell-Siddle, & Steele, 2010). These cooperative educational components often occur during the final year of study and aim to provide students with real world industry experience in their chosen areas of specialisation. Reflective practice is often encouraged in work integrated learning and cooperative educational experiences as a means for enhancing student learning (Hoskyn & Slater, 2008; Martin & Hughes, 2009). As a result of these projects, students are often found to reflect on the valuable lessons learned during their projects, the realities of working in their chosen industry, and the various aspects of their experiences that either assisted or inhibited the completion of their projects. However, it has been the experience of the researchers that prior to commencing these projects students are often unaware of how best to prepare for these cooperative educational opportunities.

## AIMS

The goal of this research is to better prepare students for industry based ICT projects by drawing on and learning from the experiences of past students. Specifically, this research seeks to discover if common themes exist amongst the student reflections of their various ICT industry based projects. The findings produced by this investigation could then potentially be used to inform future students preparing to embark on capstone projects. This research also aims to determine if any relationships exist between student project reflections, project types and final project grades.

## METHODS

Student project reflective data were collected from past students' industry project reports. The student reflections were collected from 49 ICT projects from the previous four semesters (two academic years). The projects were completed individually by students and occurred during their last semester of the Bachelor of Information and Communications Technology (BICT) degree. These projects encompassed approximately 450 hours of work spread across a 16 week semester. Based on the prior experience of the researchers in their role of academic project supervisors, a number of categories were first suggested and used for the coding of the reflective data. Subsequent to the initial coding of the student reflections the categories were revisited and adjusted. This was done to ensure the consistency of the categorisation process with the goal of achieving a suitable representation for the diverse reflections, a practice suggested by the literature (Cohen, Manion, & Morrison, 2000). As a result of this coding process a number of common themes emerged from the data which will be presented in the following section. The coded reflections were also analysed in conjunction with other project variables which included the project type and the level of academic achievement attained for the project.

## RESULTS

As mentioned in the previous section, the research sample consisted of 49 BICT students who had each completed a semester long industry based ICT capstone project in various areas of ICT specialisation. The spread of project types is shown in Figure 1 (count and percentage shown). Furthermore, for each of the projects students attained various final grades ranging from A+ to D. It should also be noted that during the four-semester period from which the reflective data was taken six other students also began projects but did not complete. These students received a final E grade and as a consequence reflective data from final reports was not available for analysis (as it was not submitted).

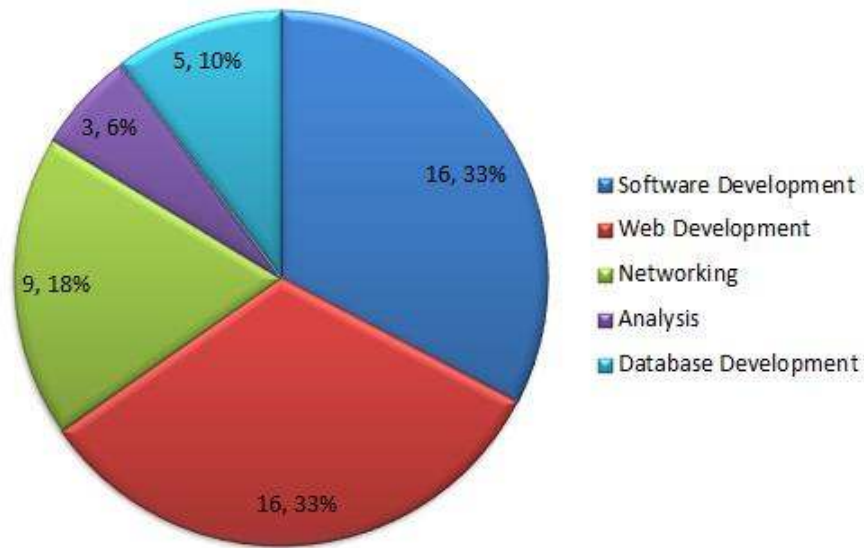


Figure 1: ICT project type distribution.

Table 1 provides an overview of the final categories used to code each of the student reflections. Initially time and communication were not divided into positive and negative categories. However, during the coding process the researchers noted positive and negative comments were consistently being reported in these areas. Consequently, during the review of the reflective categories a distinction was made between positive and negative time and communication categories.

Table 1: Reflection categories overview.

| Category         | Reflection Description  |
|------------------|---|
| Time +           | Positive reflections relating to time management                      |
| Time -           | Negative reflections relating to time management                      |
| Communication +  | Positive reflections relating to stakeholder communication            |
| Communication -  | Negative reflections relating to stakeholder communication            |
| Scope Management | Reflections relating to the significance of scope management issues   |
| Learning         | Reflections relating to improvement of knowledge and learning curves  |
| Resource Access  | Reflections relating difficulties associated with access to resources |
| Hardware Issues  | Reflections relating to issues experienced with hardware              |

A graphical representation of the student project reflection categorisations is given in Figure 2. Furthermore, in the interest of completeness, it is also worth noting that a number of other project reflections were made by students that did not fit into the previously described categories. These reflections included comments on the following topics: motivation to do the project, personal development, and improved coding practice. However, these particular reflections were not found to occur at a frequency that would necessitate unique categories for each (i.e., they were only mentioned one or two students).

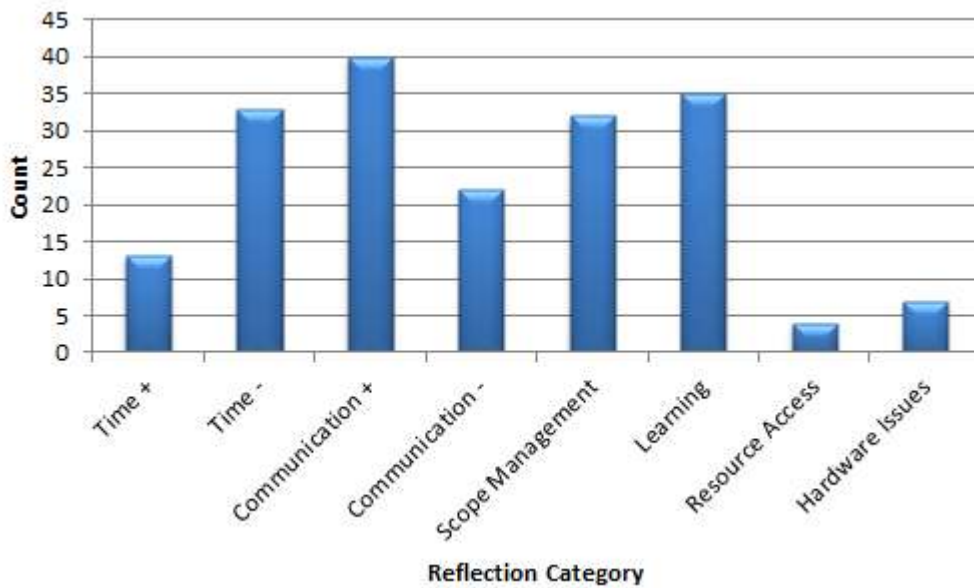


Figure 2: Distribution of categorised student project reflections.

Statistical analysis of the data found a number of significant differences between mean project final grades when the reflective categories were used as grouping variables (Table 2). For the purposes of analysis grades were given numerical values ranging from 9 to 1 which represented A+ to D. The positive column shows the mean project final grade for students who included reflections belonging to the grouping variable. Conversely, the negative column shows the mean project final grade for students who did not include reflections belonging to the grouping category. The closest actual grade is also given in brackets next to the numerical means.

Table 2: Significant project grade mean differences grouped by reflections.

| Grouping Variable | Project Final Grade Means |           | Significance (p) |
|-------------------|---------------------------|-----------|------------------|
|                   | Positive                  | Negative  |                  |
| Time +            | 7.77 (A)                  | 6.06 (B+) | .04              |
| Time -            | 5.97 (B+)                 | 7.63 (A)  | .03              |
| Communication +   | 7.00 (A)                  | 4.33 (B-) | <.01             |

The researchers acknowledge the limitations imposed by the sample size ( $n = 49$ ) and that further analysis with a larger sample would be required before attempting to generalise the findings. Nevertheless, the statistics help to present a more complete picture of the current research sample. It is also worth noting that the project type did not appear to have any bearing on the types of reflective statements included by students.

## DISCUSSION

The main reflective themes that were found to emerge from the data included time management, stakeholder communication, scope management, and learning. Forty of the students examined in this study reflected on the importance of maintaining good communication with stakeholders throughout the project experience. Interestingly, 17 of these students also included reflections on the issues that can arise from poor stakeholder communication. This suggests that many students had experienced both the negative effects of poor

communication as well as the positive effects of good communication. Students (33) also included reflections focused on poor time management. Many of these students indicating that if they were to repeat the project experience that they would place a greater emphasis on managing their time and keeping to a planned schedule. A large number of students (32) also reflected on issues associated with the management of the project scope, indicating that better management of the scope on the part of the student would have improved the overall project experience. Another common reflective theme mentioned by 35 of the students focused on the improvement and or the attainment of new knowledge during the projects. This indicates that for many of the students, the project does not only function as an opportunity to put their skills into practice, but also as an opportunity to learn new skills related to the ICT industry.

The statistical analysis results suggest the existence of some interesting relationships amongst the reflective data. The largest and most significant difference in the final project grade means was found when positive communication reflections was used as the grouping variable. This suggests that students who felt that they had maintained a good level of quality communication with their stakeholders throughout the project experience were more likely to achieve a higher grade. From the researchers' perspectives this was not a surprising outcome as many of the most successful projects are often completed by students who have successfully managed stakeholder expectations through consistent high quality communication. Furthermore, the project final grade mean was also found to be higher amongst students who included positive time management reflections and likewise lower amongst students who included negative time management reflections. Again, from the researchers' perspectives this was unsurprising as it indicates that students who reflect on good time management practices throughout the project achieve higher grades and students who reflect on poor time management practices ultimately achieve lower grades.

## CONCLUSIONS

This paper set out to investigate if there were common themes that existed amongst student reflections of ICT capstone projects with the underlying goal of using the findings to help better prepare future students for similar projects. The main reflective themes that emerged from the data related to positive and negative time management, positive and negative stakeholder communication, scope management, learning and refinement of knowledge, resource access, and hardware issues. Consequently, future students can now be made aware of these common themes with particular emphasis being place on stakeholder communication, time management, scope management, and learning.

The study also sought to determine whether or not the reflective themes were related to project type or levels of achievement. In this instance, the project type was not found to have any significant bearing on the reflections included by students. Interestingly, student levels of achievement did appear to be related to three specific types of reflective statements. Students who included positive reflections about communication and time management, on average, achieved higher final project grades. Likewise, students who included negative reflections regarding time management, on average, achieved lower grades. Accordingly, these relationships can also now be used to better prepare future ICT students by highlighting the relationships between communication and time management and levels of achievement.

Although this study has produced some interesting results, future work could enhance the findings by repeating the analysis with a larger research sample by both extending back to previous year's projects and extending forward to include projects completed in the coming semesters. Nevertheless, this study has provided a good starting point for future studies on reflective themes from ICT student capstone projects.

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# The Role of Stakeholders in Work-Integrated Education: Comparing the Perceptions of Academics, Host Supervisors and Students

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The host supervisor<sup>1</sup> plays a crucial role in the success of student placements (e.g., Patrick, Peach, Pocknee, Webb, Fletcher & Pretto, 2008). Despite this, evidence suggests there exists a 'disconnect' between stakeholder perceptions of the tasks and responsibilities of the host supervisor (Rowe, Mackaway & Winchester-Seeto, 2012, p. 116). In a review of the literature on the host supervisor role, Rowe et al. (2012) identified several factors contributing to mismatched expectations, including disparate views between stakeholders as to the purpose of placements, lack of communication and the impact of differing views about the best approach to supervision. These findings support studies which have reported conflicts (e.g., Keating, Jeffries, Glashier, & Milne, 2010; Patrick et al., 2008; Woolf & Yorke, 2010), particularly with respect to the roles of stakeholders in student learning and assessment (Yorke, 2005) and the provision of student feedback (Richardson et al, 2009).

A conceptual framework was developed from the literature review (Rowe et al., 2012). Four key roles of the host were identified: support, education, administration/managerial and guardianship, each of which incorporated a number of sub-roles (Figure 1).

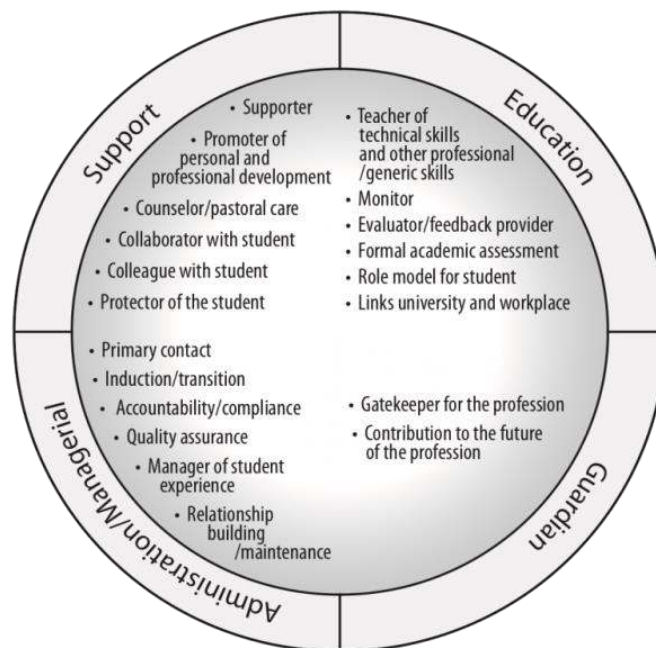


Figure 1: Host supervisor – summary of primary roles.

The roles and responsibilities of students and academic supervisors, in Work-Integrated Learning (WIL) have been researched in a few disciplines (e.g., nursing and education) and addressed in several reports (e.g., Keating et al., 2010; Patrick et al., 2008). However, there has been little research about what each stakeholder understands about the role of the others. This can lead to misunderstandings, miscommunication and minor issues falling between the cracks, but it also has the potential to reduce the effectiveness of WIL for students, to jeopardise the welfare of students and to spoil otherwise productive partnerships.

<sup>1</sup> The term 'host supervisor' refers to anyone responsible for supervising the experience of students who are undertaking a placement, and is inclusive of terms such as workplace supervisor, mentor, preceptor, guide etc.

## METHODS AND METHODS

The aim of the study was to explore perceptions of host supervisors, university staff (academic supervisors and professional staff) and students, in terms of their understanding of the roles and responsibilities of each stakeholder, and to identify similarities and differences.

Semi-structured interviews and focus groups were conducted with university staff ( $n=25$ ), host supervisors ( $n=26$ ), and students ( $n=6$ ) involved in WIL. Interviews were conducted from the researchers' university, and focus groups were held both at the researcher's university and at a national conference. Interviews and focus groups were recorded and professionally transcribed.

Questions asked participants to reflect on the roles and responsibilities of the host supervisor, the academic supervisor and of students. Follow-up questions focused on assessment, feedback, communication, teaching and emotional support (identified as important responsibilities in the literature review).

Transcripts were coded and analysed using QSR NVivo 9 software. Coding was undertaken by the research team, with each transcript coded independently by two different researchers. To further enhance reliability, the team met regularly to review consistency of coding categories. High level codes for host and academic supervisors (*support, education, administration/managerial, and guardian*) were sourced from the conceptual framework described previously (Rowe et al., 2012). However, lower level codes (e.g., *communication, educational input, and monitoring*) and high level codes selected for students were derived directly from the data.

## RESULTS AND DISCUSSION

The main purpose of this phase of data analysis was to determine how frequently individuals spoke about the particular roles and responsibilities of each stakeholder. The number of remarks made about each role category (i.e., the number of coding references) was used as a proxy for the perception of the frequency and/or significance of the role in the view of interviewees. The analysis was undertaken by using the matrix coding queries function of NVivo. Table 1 shows the number of coding references as a percentage. The student group has been excluded from Figure 2 because of the small numbers. The lower number of student participants was a limitation of the study, and care should be taken when drawing conclusions from student responses.

Table 1: Matrix of roles x participant group as measured by frequency of coding references.

| Roles                       |                | Participant group                |                                 |                        |
|-----------------------------|----------------|----------------------------------|---------------------------------|------------------------|
|                             |                | University Staff %<br>( $n=25$ ) | Host Supervisor %<br>( $n=26$ ) | Student %<br>( $n=6$ ) |
| Academic                    | Administrative | 23                               | 12.4                            | 15.8                   |
|                             | Educational    | 14.9                             | 1.7                             | 18.0                   |
|                             | Support        | 4.9                              | 0.9                             | 2.6                    |
| Host                        | Administrative | 11.7                             | 20.6                            | 12.8                   |
|                             | Educational    | 16.5                             | 25.6                            | 13.7                   |
|                             | Support        | 4.3                              | 18.3                            | 7.7                    |
| Students                    | Administrative | 7.9                              | 5.0                             | 8.5                    |
|                             | Educational    | 7.3                              | 1.7                             | 7.7                    |
|                             | Personal       | 8.1                              | 11.7                            | 12.8                   |
| Total no. coding references |                | 369                              | 540                             | 117                    |

Note. Percentages were calculated based on coding references, that is, the frequency with which each role was mentioned by a particular participant group. Any category where the maximum was less than 2% was removed (this includes categories of 'Guardian' and 'Other').



The most obvious observation is the extent to which host supervisors talk about their own role (64.5% of coded remarks), whereas university staff refer to their own role in less than half the coded references (42.8%). This may point to the relative isolation of host supervisors from other stakeholders and consequent lack of understanding of their roles. In contrast the role and responsibility of the student is the least frequently referred to, making up only 23.3% of coded references from university staff and 18.4% of host supervisor references. In general, the pattern of student responses was closer to that of academics than of host supervisors, reinforcing the view that hosts were more out of the loop.

The biggest differences were around the roles of support by the host supervisor, and that of the academic in education and administration. From this data it would appear that support work of host supervisors is largely unrecognised by academics (including; availability, emotional support, making the student comfortable, personal/professional development, special issues). Host supervisors clearly take this aspect of supervision very seriously, with some reporting going well above and beyond what is normally expected to ensure student welfare. The importance and extent of support work by host supervisors is echoed in many studies (Rowe et al., 2012). Such mismatches between academics and hosts can lead to lack of clarity about what is happening with students, missed opportunities to support hosts or reinforce their work, and a danger of vital issues being missed to the detriment of student wellbeing.

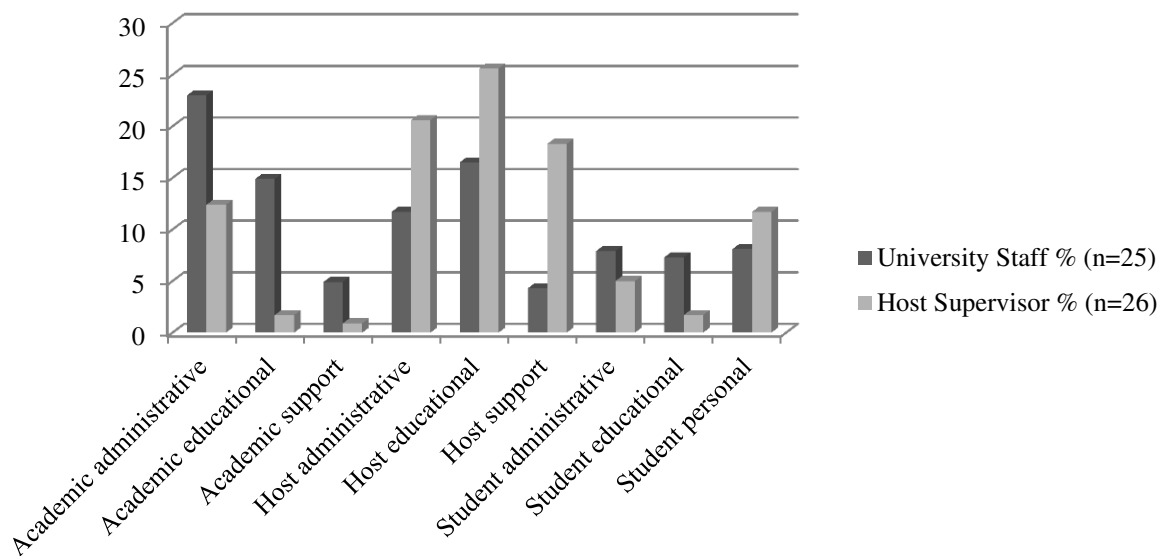


Figure 2: Comparison of university staff and host supervisor perceptions of roles as measured by frequency of coding references.

Interestingly, the support role of academics is relatively infrequently noted by either, but particularly by host supervisors. In tandem with the large number of references to their own support role, this would imply that the bulk of support work is done by hosts. The support role of academics in this study encompasses emotional support, support for partners where there are difficulties, problem solving and managing 'at risk' students. Thus it seems from this data that the support role of the academic largely focuses on students who are having difficulties.

Somewhat puzzling is the mismatch in perceptions of hosts and academics about the educational role of academics (including; student preparation, scaffolding, debriefing, assessment, curriculum design, subject matter, theoretical aspects, linking theory to practice, and remedial work). It is unclear from the data whether host supervisors are unaware of the work done by academics in this area, or whether this work is just assumed. Difficulties can arise where there is no understanding by hosts of the theoretical or practical skill development work done at university and potential areas of conflict that can confuse the student. There may also be lost learning opportunities where hosts could reinforce university learning and help to integrate theory with practice. The latter has been identified as a weakness in the way Work-Integrated Learning is currently practiced (Coll & Zegwaard, 2011).

Unsurprisingly the administrative role preoccupies university staff and the hosts. It is, perhaps, one of the less glamorous roles, but is acknowledged as necessary, albeit time consuming.

## CONCLUSIONS AND IMPLICATIONS

This study has drawn on only a part of a rich data set and there is clearly much still to be learnt from a more detailed analysis. Nonetheless the data supports earlier studies on the role of host supervisors, and confirms our previous finding that there are mismatched expectations of the roles of host supervisors (Rowe et al., 2012). Moreover it appears that host supervisors do not really understand what academics actually do to support and educate students, and academics severely underestimate the support role of hosts. Better understanding may foster closer cooperation to provide a better education for students and enhance the experience for all stakeholders.

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# Work Placement Influences on Students' Perceptions of Ethics and Values

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Students undertaking work placements as part of work integrated-education programmes are situated in a relevant community of professional practice and over the course of the placement exposed to situations that are ethical in nature. It is through these experiences that students shape and understand their own identity as professionals. Increasingly the literature identifies the importance of values education, enhancing ethical knowledge and conduct, and professional identity development (Campbell & Zegwaard, 2011a; Herkert, 2000; Keown, Parker, & Tiakiwai, 2005; Trede, Macklin, & Bridges, 2011). Universities are under increasing pressure to develop work-ready graduates (Archer & Davison, 2008; Lomax-Smith, Watson, & Webster, 2011), and with the focus on graduate outcomes, a move towards developing ethically and socially aware graduates (Barrie, 2004). However, teaching ethics and values is fraught with difficulties (Bowie, 2005) and teaching ethics is largely limited to raising awareness rather than causing action (Spier, 2002).

Inherent in discussion around ethics and values is the concept of professionalism, and it is our position that for someone to act professionally implies that this person must also be acting in an ethical manner. Students engaged in undergraduate studies tend to have narrow conceptualisation of professionalism (Grace & Trede, 2011), including professional ethics and workplace values. The literature argues that to have effective enhancement of professional ethics development, then professional identity development and professional ethics must be embedded into the curriculum (Campbell & Zegwaard, 2011b; Trede, 2012) and must recognise that student prior identity development is strongly related to how student engage with professional work-life (Reid, Dahlgren, Peticz, & Dahlgren, 2008).

## AIMS AND METHODS

The aim of this study is to investigate student's pre- and post-placement understandings and experiences of professional ethics, values, and decision-making as part of a work integrated-education program. This study includes several different disciplines across two universities, University of Waikato and Griffith University. The study is on-going and reported here are only the findings for the Science and Engineering students perceptions prior to undertaking a work placement.

Data was collected using surveys before placement and interviews in the first week of placement. The study used an online survey instrument asking to respond, using ordinal 10 point Likert scales (where 10 = strong agree), to a number of statements and respond to case study examples. For the questions exploring who influenced their personal values development, Likert scales of 1-5 were used. Surveys invitations were sent electronically to a class of 119 pre-placement students, which provided a 26% response rate ( $n = 31$ ), a response rate not unusual for a lengthy online survey without incentives (Deutsken, de Ruyter, Wetzels, & Oosterveld, 2004; Dillman et al., 2009). The interview data was collected using 45-minute semi-structured face-to-face interviews, utilising four self-volunteered participants. Interviews were audio recorded and thematically analysed. This research has ethical approval from the University of Waikato and Griffith University ethics committees.

## RESULTS

All but two survey participants had previous work experience in an unrelated field to their studies, with five indicating that they also had completed some related work. When the survey Likert data was subjected to the Cronbach's Alpha test, the results indicated strong internal consistency with low variance ( $\alpha = 0.92$ ;  $\bar{x}SD = 2.01$ ).

Students strongly believed that parents/caregivers had most influenced their personal values development (Likert 4.61 out of 5), followed by their friends/peers (Likert 3.32), and wider family (Likert 3.06). However, they tended to be unsure or disagreed that prior workplaces (Likert 2.94 out of 5), teachers/lecturers (Likert 2.65), media (Likert 2.19), community leaders (e.g., coaches, youth leaders) and wider community (Likert 2.13), and religious leaders (Likert 1.68) had influenced their personal values development. Of the participants, 12% indicating they regularly attended religious service, which correlated ( $r^2 = .61$ ;  $p < .05$ ) to their view of religious leaders having influenced their values.

Most students indicated they had a good understanding of their own values (Likert 7.61 out of 10) and believed it was important to understand one's own values (Likert 8.35). Most students did not think they often struggled to determine the ethical good decision (Likert 3.42), however, indicated that others around them did struggle (Likert 5.03) more than they did. Students were also not convinced that society generally had good values (Likert 5.10). There is a tendency for individuals who strongly believed that it is good ethical practice to strictly adhere to codes to also strongly agree ( $p < .05$ ) that following the law is always right and that adherence to codes is more important now than before.

Students were unsure if they had a sound understanding of their professional values (Likert 5.83 out of 10) and thought professional ethics were complex (Likert 6.73). All students agreed that their personal values will inform their professional values (Likert 7.80) and most thought they will be able to adhere to their personal values during their placement (Likert 7.53). Even though students thought it was particularly important to adhere to a code of ethics (Likert 8.57), they held divergent views if good ethical practice requires strict adherence to codes (43% strongly agree, 31% strongly disagree, 26% unsure). Students tended to believe they would speak up for what is right even if it offends (Likert 7.23), however, in the survey example of a colleague unfairly, publically, and harshly rebuked for a mistake, only 40% said they would speak up (27% would not, 33% were unsure). Students also tended to be unsure if they could positively change the ethical behaviour in the workplace (Likert 5.93).

## DISCUSSION

One's own self-identity, and personal disposition and values framework within, builds up over time from experience and personal reflections (Bowie, 2005; Nystrom, 2009), and is used as an interpretive lens to understand the world around them (Billett, 2006; Campbell, 2009). When asked who influenced the development of their personal values, the results indicate that, aside from family and friends, students did not see any other person(s) as a significant factor of influence. However, literature has long argued that teachers (Weissbourd, 2003; Yost, 1997) and media (Entman, 1989) have significant influence, and the results here suggest that students have not appreciated the complex, long-term development of their dispositions. To best understand this lack of awareness, Foucault's constructs of governance and power need to be considered, where it is argued people comply, often unknowingly and uncritically, to the socially dominant positions. When explored further in interviews, some interviewees explained they developed their own values framework, that is, as an internal reflective cognitive process rather than one significantly influenced by external factors. However, given the difficulty students had answering these interview questions and lack of recognition of other influential factors, it may indicate that the influences on their value's framework development had mostly been an implicit learning development, influenced from both external (but, to them, not explicitly noticeable) factors and internal cognitive processes.

In the survey, students perceived that they mostly did not struggle in determining good ethical decisions, but did more strongly believe ( $p < .01$ ) that the people around them tended to struggle. Given that their peers were part of the same sampling group, it implies that individual students tend to hold a higher view of their own ethical capacity than that of others. This implication is supported by that students also held a significantly ( $p < .05$ ) stronger views that they 'behaved ethically' than compared to the view that 'society had generally good values'. Such positioning presents a significant challenge for ethics education as there may be reluctance to have personal positions challenged because of the belief that they are already ethically superior to the others around them and, thus, their externally offered alternatives.

Most students thought that their professional values would stem from codes and regulations (seconded only to personal values) and thought it was important to adhere to a code of ethics. The later likely reflects the practice, particularly for engineering, of emphasising the importance of professional code of ethics in conversations around ethical conduct. However, interestingly, students separated into distinct opposing groups on the view if good ethical practice requires strict adherence to codes. The view by some that strict adherence is not required

may be better understood when considering the positive, but not overwhelming, responses to the question if they struggled to determine the ethically good choice (indicating some struggles). Interview data suggested the struggle to determine the right ethical choice was mostly in complex social situations where it was difficult to determine which choice causes the 'greater good' and when the significance of the impact of the decision on other individuals were taken in consideration. That is, when different desirable values conflict and adherence to a list of values (or codes) may not cause a decision that serves the greater good. Such thinking may broadly be considered as a 'consequential ethics' framing. Likely, it is the conflict between this personal framework and the duty bound concept of a code of ethics that was the source of the struggle.

Prior to commencing the work placement, students almost unanimously thought it was important to understand their professional values, however, considered professional ethics to be complex and were unsure if they had a good understanding of their professional values. The literature discusses the need for young professionals to be moral agentic in their workplace and to have voice (speak up) at the times when required (Billett, 2009). However such voice needs to be mindful of the positions of workplace power (Spencer, 1981), particularly as students are in a position of lesser power. Students did indicate a readiness to speak up, however, this contrasts to the 60% that indicated in the example that they either would not speak up or were unsure. Similarly, students believing that they adhered to good ethical behaviour, however, were not convinced they would positively impact the ethical behaviour in the workplace. Likely, these dissonances stems from several sources, such as the expected differing positions of workplace power, the perceived complex nature of professional ethics, the uncertainty of their own professional ethics, and how these would present in the workplace.

## CONCLUSIONS

Even though most students felt they had a good understanding of their personal values and believed they behaved (mostly) ethically, they clearly felt unprepared for the complexities of professional ethics and workplace values. They held perceptions of uncertainty around their understanding of their own professional ethics and values, and were unsure how adherence might look as practice in the workplace. This highlights a need for preparation for professional ethics prior to commencing work placement. However, likely engaging in actual ethical practice in a workplace will grant the student the greatest learning experience which, when supported by structured post-placement reflection, will best enhance the overall learning experience and development.

This work is only at an early stage of a longitudinal study and it is intended further findings will inform Work-Integrated Learning practitioners and ethics educators on how to better cause greater student awareness of, and preparedness for, engagement with professional ethics in the workplace.

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