Improving graduate attributes with online teaching resources: A case study in IT management

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The paper backgrounds the *UTS Work-ready Project* which aims to improve graduate professional attributes and employability understandings and skills. The Project makes available online teaching and learning resources to support the integration of Work-Ready Learning Activities (WRLA) into the existing curriculum. The WRLA's are contextualised for each profession's workspace to maximise relevance for both students and academics. The paper presents a case-study of the integration and evaluation of contextualised WRLA's to improve teamwork processes into three subjects in the IT Management curriculum. Students were surveyed to obtain feedback on the usefulness of a team collaborative decision-making WRLA and whether it helped in their undertaking of a group assessment task. The survey results were positive when averaged across the three subjects and the five surveys conducted indicate 85% of students thought the activity was useful. However in relation to whether the WRLA helped in the group assessment task there were mixed results. Undergraduate students reported the WRLA made little difference, whereas post-graduates indicated the WRLA did help the team produce their group assignment. We also present reflections and lessons learnt from the perspective of a Subject Coordinator trying to improve graduate work-readiness within the existing curriculum.

Keywords: professional graduate attributes, online teaching resources, curriculum integration, contextualised learning

Introduction

In the last 20 years employers, governments, professional societies and accrediting bodies have articulated an expectation that universities should produce graduates that are more ready for work (Mayer, 1992; ACNielsen Research Services, 2000; ACCI & BCA, 2002; DEST, 2004; Precision Consulting, 2007). However, the design of university curriculum is focused on disciplinary body-of-knowledge and profession-based understandings. The learning of graduate attributes remains predominately haphazard and incidental rather than designed and deliberate. This curriculum status is no longer adequate and the contemporary workspace increasingly demand better developed professional attributes in university graduates (Litchfield, Nettleton & Taylor, 2008).

The importance of developing professional graduate attributes has been widely discussed in academic literature (Clanchy & Ballard, 1995; Finn, 1999; Holmes, 2002; Barrie, 2005; Barrie, 2006). Barrie and Prosser (2004, p.244) argue that graduate attributes "have their roots in the contested territory of questions as to the nature of knowledge and the nature of a university". The continuing pressure from university stakeholders is influencing universities to re-think graduate attributes and introduce the more systematic development of professional work-ready learning objectives and outcomes in curriculum renewal activities.

The focus of this paper is the implementation of a teamwork collaborative decision-making Work-Ready Learning Activity (WRLA) into the design of three Management subjects within Information Technology (IT) undergraduate and postgraduate award programs. The paper overviews the need for better work-ready graduate attributes in the curriculum, provides a description of the *UTS Work-Ready Project*'s contextualised online teaching and learning resources, examines the teamwork literature and details the implementation of the WRLA into three IT subjects. The author's reflect on the student feedback about

the impact of the WRLA and the lessons learnt on using the project's online teaching resources and activities.

The UTS work-ready project

The *UTS Work-Ready Project* is a collaborative curriculum renewal initiative that aims to cumulatively improve professional graduate attributes by designing new subjects, new career-envisaging subject modules and short work-ready learning activities to be integrated into the existing curriculum. The Project directly addresses the University's strategic plan's objective of increasing graduate preparedness to pursue successful careers in changing professional workspaces (Nettleton, Litchfield, & Taylor, 2008).

Identifying key professional graduate attributes for IT Students

Representatives of the Australian Computer Society (ACS) were interviewed to gather specific data relating to the work-readiness of graduating IT students. In the interviews, the key question asked was *'what are the attributes of a professional work-ready IT graduate?'* Other questions were asked as to what is meant by 'professional' and the understandings, knowledge and skills employers look for in contemporary university graduates.

The identification of the key IT professional work-ready graduate attributes has been informed by; 1) the interviews with the ACS representatives and 2) the Australian Government's key employability skills of communication, teamwork, planning and organising, technology, problem solving, self-management, life-long learning, and initiative and enterprise (DEST 2004).

The ACS identified the DEST employability skills as well as professionalism and ethics, global perspectives and the ability to apply knowledge. Discussions with colleagues identified information literacy and research as key attributes. The application of knowledge was incorporated into a number of the work-ready attributes. As such, the following key IT work-ready graduate attributes shown in table 1 have been identified:

Table 1: The Key IT work-ready graduate attributes

| 1. Communication	2. Ethics and professionalism
3. Global and Local Perspectives	4. Information Literacy and Management
5. Initiative, Enterprise and Creativity	6. Planning and Organising
7. Problem Solving and Critical Thinking	8. Research
9. Self-Management and Life-Long learning	10. Teamwork and Leadership
11. Technology Literacy	12. Other

Integrating contextualised work-ready learning into the IT curriculum

Once the eleven key professional graduate attributes were identified the Project focused on designing implementation strategies and a website to support the learning and teaching of these attributes. The approach has been a systematic one of identifying sub-attributes, understandings and skills that can be learnt for each key attribute. Following this, the project commenced designing generic work-ready learning activities which were then contextualised for each profession to support the integration and embedding of this learning into the existing curriculum.

An online matrix was developed of *generic* key work-ready attributes, sub-attributes, understandings and skills that can be learnt. Then each profession and discipline has its own matrix of *contextualised* learning activities. Academics can browse the matrices for relevant learning activities, most of which are of 50 minute duration to be suitable for tutorials and laboratories (Litchfield & Nettleton, 2008).

From the matrixes downloadable teaching support resources, including lecture slides, tutorial activities, case-studies, handouts and readings, are available for each activity. These teaching supports enable the academic to incorporate the work-ready learning activity into their subject effectively and with reasonable ease. For copyright compliance these learning and teaching resources are only available to UTS staff (Authors 2008).

Consulting professional societies & identifying key generic graduate attributes.
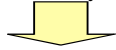
Identifying sub-attributes, understandings and skills for each attribute (eg. teamwork) to create a matrix of generic learning activities

Attribute	Attribute Reference	Introductory Learning Activities	Intermediate Learning Activities	Advanced Learning Activities
10. Teamwork & Leadership				
10.1 Capacity to lead in organisational situations	Generic	GEN.10.1.intro	GEN.10.1.med	GEN.10.1.adv
10.2 Multicultural team formation and development	Generic	**GEN.10.2.intro**	**GEN.10.2.med**	**GEN.10.2.adv**
10.3 Group problem solving and applying teamwork	Generic	**GEN.10.3.intro**	**GEN.10.3.med**	**GEN.10.3.adv**
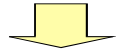
Links to each profession's matrix of contextualised work-ready activities

- Information Technology (ACS) - Australian Computer Society
- Business (AACSB) - Association to Advance Collegiate Schools of Business
  - Accounting (ICAA and CPA) - Institute of Chartered Accountants in Australia and Certified Practising Accountants Australia
  - Finance (CFA) - Chartered Financial Analyst Institute
  - Human Resources (AHRI) - Australian Human Resources Institute
  - Management (GMAA) - Graduate Management Association of Australia
  - Marketing (AMI) - Australian Marketing Institute
- Engineering (EA) - Engineers Australia
- Law - NSW Bar Association
- Nursing, Midwifery and Health - Australian Nursing & Midwifery Council
- Science
  - Chemistry, Materials and Forensic Sciences
  - Environmental Sciences
  - Mathematical Sciences
  - Medical and Molecular Biosciences - MTAA
 - Physics and Advanced Materials

Contextualised learning activities are quality assured by local-area leaders and the professional societies and then published on the project website

Attribute	Attribute Reference	Introductory Learning Activities	Intermediate Learning Activities	Advanced Learning Activities
10. Teamwork & Leadership				
10.1 Capacity to lead in organisational situations	FIT.GA1 - Teamwork	IT.10.1.intro	IT.10.1.med	IT.10.1.adv
10.2 Multicultural team formation and development	FIT.GA1 - Teamwork	IT.10.2.intro	IT.10.2.med	IT.10.2.adv
10.3 Group problem solving and applying teamwork	FIT.GA1 - Teamwork	**IT.10.3.intro**	**IT.10.3.med**	**IT.10.3.adv**
10.4 Coaching and mentoring skills including giving feedback	FIT.GA1 - Teamwork	**IT.10.4.intro**	IT.10.4.med	**IT.10.4.adv**
10.5 Group and individual dynamics in organisations	FIT.GA1 - Teamwork	IT.10.5.intro	IT.10.5.med	IT.10.5.adv
Other	**Please click here to add a learning activity or suggest a new sub-attribute**			

Displayed: Beginning of the IT profession's contextualised matrix of work-ready activities
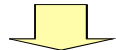
Academics choose 50 minute work-ready learning activities from the generic or their profession's matrix and can down-load teaching support resources for effective and efficient integration into their subjects
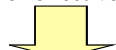
Final contextualising by academics to 'fine-tune' and develop ownership of the activity

Figure 1: Contextualising teamwork learning activities for the IT profession

Figure 1 depicts the *UTS Work-Ready Project* website matrices and their relationship to one another. The Project's support for the learning and teaching of graduate attributes has two key components:

- Contextualising learning activities for each profession and discipline, and
- Integrating and embedding work-ready learning into the existing curriculum.

Designing contextualised online work-ready teaching and learning resources

Having contextualised learning activities as the principle strategy for engaging students and academics in the existing curriculum, an appropriate design approach was developed (Figure 2). In addressing the requirements of diverse professional and disciplinary courses the project has recognized the need for a collaborative approach. Having academics involved in the process of developing and sharing learning activities and experiences is central to embedding this learning in the curriculum. The importance of academic ownership of developing work-ready attributes has been well recognised in the success of such curriculum renewal (Scoufis, 2000; Sharp & Sparrow, 2002).

To support the embedding of work-ready activities into subject and curriculum design the *Work-Ready Project* has developed a collaborative approach to both the contextualising of the activity (language, writing, learning resources) and the embedding of that learning within the discipline, whether it be Business, Engineering, IT, Law or Science. The entire process is available for academic involvement from designing the learning activity design through to specific professional contextualising, integration and use (Frawley & Litchfield, 2009).

The process of contextualising of work-ready activities is below and represented in Figure 2.

1. Design generic work-ready learning activity,
2. Publish to the generic activity matrix,
3. Generic activity is contextualised for each profession by the project staff and academics,
4. Improvement sought from academics and the professional societies before the activity is integrated into the *Work-Ready Project* website,
5. The academic chooses and may further tailor the learning activity for their purposes,
6. Integration and use by the academic,
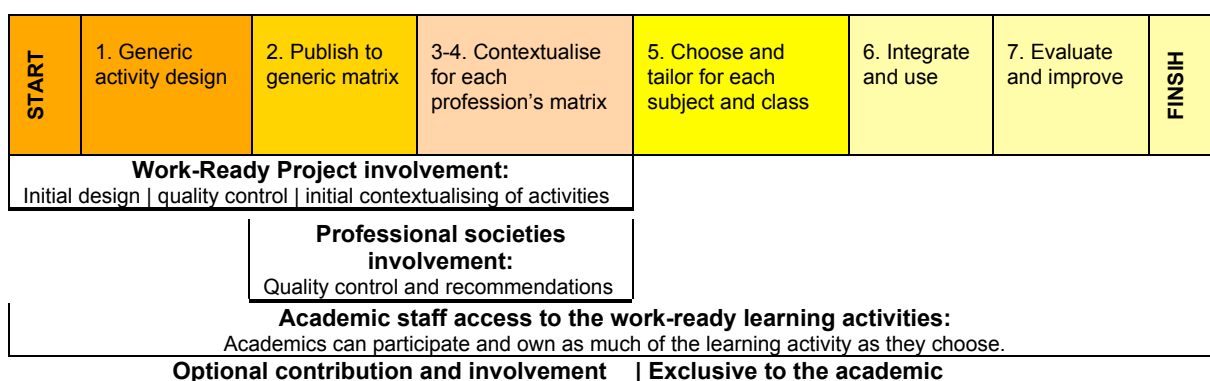7. Academic and student evaluation of the activity for redesign and improvements to the contextualised version.

Figure 2: Level of academic staff involvement in the contextualising process

The initial contextualization of generic learning activities is undertaken by either an academic or a project officer. At the generic level prior to contextualising the "language we use to name the world" (Boud & Walker, 1998, p6) often presents a perception barrier both for the academic and the student that the content is not part of their discipline. One of the difficulties overcome through contextualising learning resources is to engage academics in the need for graduate attributes to be better integrated into their subjects and the existing curriculum.

Contextualising an activity needs various approaches; some may need to be completely re-written, or have supplementary case-studies provided, others may need only minor changes to linguistic features. In the following example the contextualising moves from the generic sentence (sGen) to IT (sIT) and adapts language to suit the particular profession:

> *(sGen):* Alex and Terry (Alex's Manager) are having their weekly meeting.
> *(sIT):* Alex is an in-house programmer for a telecommunications company. Terry, Alex's manager and the IT Director, is meeting with Alex for their weekly meeting.

While contextualising is not always as simple as framing a scenario within a profession's context and language, the effect of language change is highly successful in overcoming perception barriers and legitimising the learning and teaching of work-ready attributes.

Contextualising work-ready activities improves the perceptions of both students and academics who might otherwise dismiss the development of graduate attributes as irrelevant and 'other' from their profession's body-of-knowledge.

A matrix of contextualised work-ready learning activities for each profession

For each key professional graduate attribute relevant sub-attributes, understandings and skills that can be learnt have been identified to form a conceptual matrix which is the backbone of the Work-Ready Project's wiki website. These professional understandings and skills are then aligned with short Work-Ready Learning Activities (WRLA) designed by colleagues, educational designers and the project's University partners; the academic literacy centre, the Careers Service, and the Library. Academics can browse the matrices for relevant learning activities, which are 50 minutes in duration and therefore suitable for tutorials and laboratories.

The first and most up-to-date matrix supports an online collection of generic work-ready learning activities. Then for each professional field of study involved in the project there is a separate matrix of these learning activities (currently 16 exist) which have been contextualized to suit each profession and to improve academic and student relevance and motivation to learn. Thus the work-ready understandings and skills are learnt within their professional context and this approach supports the integration and embedding of the learning of graduate attributes into the curriculum (Frawley & Litchfield, 2009).

WRLA's may have introductory, intermediate and advanced versions which are suitable for use in both undergraduate and postgraduate programs. Each work-ready learning activity is designed for easy, effective and practical integration into the existing curriculum and teaching program. Academics can view, choose and download work-ready learning activity outlines that describe each activity using a standard one-page template. Most activities are designed to take 50 minutes to facilitate and come with down-loadable teaching and learning support resources such as lecture and tutorial slides, tutorial and classroom activities, case-studies, and relevant handouts and readings. These teaching supports enable the academic to incorporate the work-ready learning activity into their subject effectively and with reasonable ease.

The importance of professional teamwork attributes

The Australian Computer Society (ACS) considers teamwork attributes critical for IT graduates (Nettleton 2007). Having knowledge of teams and how teams operate is essential in the IT industry. Graduates must be able to; work in teams, communicate with others, solve problems collaboratively and reach a consensus. The ability to work across different departments and levels of seniority and with multicultural members are important features of successful teamwork. The contemporary IT professional must adapt to working on diverse projects with different people for different time periods.

Being able to work effectively as a team member is crucial to the successful operation of organizations and hence a core skill for any graduate entering IT workspaces. Employees collaborate, cooperate and work effectively together in today's workspace to allow organizations to meet marketplace demands (Hertel, Geisterb & Kontradtb 2005, Majchrzak, Malthora & John 2005). This is not new as a survey of U.S. firms in 1995 found that over 84% of complex and innovative products and projects relied on cross-functional teams (Griffin, 1997).

Project work is prevalent in most organizations and therefore employees must work effectively as part of a team (Forret & Love 2008) to "collaborate interactively to achieve common goals" (Hertel et al 2005: p71). Teams are a collection of individuals with a common purpose, who interact to accomplish goals, and share responsibility for the team outcomes (O'Neill & Kline 2008). Hence each team member must collaborate to work effectively with their team to deliver the expected outcomes.

Forret & Love (2008), Hertel et al (2005) and Majchrzak et al (2005) all posit that collaboration and cooperation among employees is critical to allow organizations to operate in their changing environments. The global marketplace has seen the use of distributed or virtual teams become increasingly important. Knowing your role and responsibility with a virtual or global team is extremely important as these teams cross geographic locations and business unit boundaries and may have diverse reporting needs

(Majchrzak et al 2005). Doz & Kosonen (2007: p1) concur stating "executives … usually have a very clear idea of their roles and responsibilities and how they relate to one another and how to work together effectively, and the result is a well-oiled operation".

Most organizations strive for superior teamwork from employees as exceptional collaboration can help achieve corporate goals and competitive advantage (Day et al 2004). Hence, teamwork is often promoted as a fundamental organizational competency. "Star performers don't operate in a vacuum; they operate as part of a team, and their success stems at least in part from their team relationships" (Groysberg & Abrahams 2006: p1). Good relationships among team members allow for advice to be given and taken making it easier to appreciate the team's combined responsibility to the task (Doz & Kosonen 2007).

Case-study of integrating teamwork WRLA's into the IT curriculum

At UTS during the Spring 2008 and Autumn 2009 semesters three IT Management subjects incorporated a teamwork-oriented WRLA into their course content. The subjects were chosen to undertake the teamwork WRLA as the subject assessment included a group work assignment. Students undertook the teamwork activity in a tutorial class and were surveyed to gain feedback concerning the impact of the WRLA. The surveys aimed to gain student feedback in order to 1) evaluate the usefulness of the WRLA to the group assessment tasks and 2) collect constructive feedback to improve the WRLA.

In Spring 2008, the IT postgraduate subject Project Management had a teamwork WRLA incorporated into the curriculum structure. In project management teams and teamwork are essential and hence this subject was a good choice to act as a pilot implementation of the collaborative decision-making WRLA. This subject had two group assessment items 1) a weekly workshop and 2) the final assignment.

Students were given an overview of the *Teamwork: Group Problem Solving* activity (Bolton, 1987) and then undertook the teamwork based activity. The WRLA was conducted approximately mid-semester. Students were surveyed after the completion of the final assignment (end of semester) as to the usefulness of the teamwork activity in relation to their team assignment.

The survey consisted of five (5) questions with questions 2 to 5 being open-ended questions.

1. How would you rate the Work-Ready Activity? (Scale; 1 not useful through to 5 very useful)
2. What are the best aspects of the Work-Ready Activity?
3. What were the least useful aspects of the Work-Ready Activity? How could it be improved?
4. Did the Work-Ready Activity influence your assignments?
5. Do you have any other comments?

Twenty two (22) postgraduate students completed the survey. Eighteen (18) students rated the activity 3 or greater (question 1) indicating that it was a useful activity. Fifteen (15) students stated that the activity was useful for the team assignment work. In response to the question 'Did the Work-Ready Activity influence your assignment?' one part-time student commented "no, but that could be because I work fulltime and already use these processes and understand how to work in a group". This comment suggests that the *UTS Work-Ready Project* is meeting one of its objectives in giving students skills used in the professional workspace.

In Autumn 2009 two additional IT management subjects - IT Contracts and Outsourcing (post-graduate) and Managing Client Vendor Relations (undergraduate) - were chosen to include the WRLA in their curriculum structure. Both subjects focus on IT Outsourcing, where project work and teamwork play a major role, and had a group presentation assessment item so they were good candidates to use the *Teamwork: Group Problem Solving* WRLA. All students were given an overview of the learning activity and then undertook the teamwork based activity.

Students in these two subjects were surveyed twice due to feedback received in the previous semester. The surveys were conducted after the completion of the WRLA and then after the completion of the group assessment item. Students who did not participate in the initial survey were requested not to complete the final survey.

The follow-up subject findings are presented in tabular form to allow the survey questions and summary of responses to be presented together. The initial survey findings are shown in Table 2 while the final survey findings are shown in Table 3.

Table 2: Survey findings immediately after the WRLA

How would you rate the Group Problem Solving Work-Ready Activity? (1 not useful ➔ 5 very useful)	
92% of undergraduate s (25 of 27) rated the activity 3 or above indicating it was useful	96% of post-graduates (28 of 29) rated the activity 3 or above indicating it was useful
What are the best aspects of the Work-Ready Activity?	
Undergraduate comments included; • brainstorming to generate ideas • collaboration to derive a consensus • group participation leading to different opinions • communication with others	Post-graduates comments included; • gave the chance to hear other student's ideas • helped to get to know other the students • helped to gain an understanding for group work • helped in communicating with other students
What were the least useful aspects of the Work-Ready Activity?	
81 % (22 of 27) of undergraduate s responded and most comments focused on; • the lack of detail in the case scenario • the lack of time allowed for the activity	The limited post-graduates responses focused on; • students not participating in the activity • students giving limited input • having a dominant person in the group • the group generating too many ideas
Do you have any other comments?	
Undergraduate s gave these other comments; • "the lack of detail in the case scenario" • "the activity should be a whole class activity to allow more conflict to surface" • "the activity was enthralling"	Post-graduates gave these other comments; • "a lack of information in the case scenario" • "working in groups is really essential for us …" • "Because work full-time … I can see it being beneficial for an under-grad or someone who hasn't worked"

Table 3: Survey findings at end of the semester

How would you now rate the Work-Ready Group Problem Solving Activity? (1 not useful ➔ 5 very useful)	
67% of undergraduate s (16 of 24) rated the activity 3 or above again indicating it was useful	92% of post-graduates (24 of 26) rated the activity 3 or above again indicating it was useful
Did you find this Work-Ready Group Problem Solving Activity useful when developing your presentation?	
33% of undergraduate s (8 of 24) indicated the WRLA was useful due to brainstorming of ideas and determining the presentation content. 45% of undergraduate s (11 of 24) said the WRLA concepts did not help or were not used as: • "It was done to long ago" • "... it was not really applicable for our group"	88% of post-graduates (23 of 26) agreed the WRLA was useful. Comments included: • "The work ready group problem solving activity certainly helped develop a good presentation" • "Yes, quite effective" • "It reinforced the practices presented by ELSSA (Academic Support Centre) during my induction week..."
Did this Work-Ready Group Problem Solving Activity have any influence over how your group developed your presentation?	
21% of undergraduate s (5 of 24) said the WRLA helped but failed to give the reasons behind this. 79% of undergraduate s (19 of 24) said the WRLA did not influence presentation development. However, one student stated "No it didn't help, we still stuck to our old habits (… inefficient as usual)".	46% of post-graduates (12 of 26) agreed that the WRLA did help with brainstorming to generate ideas the most cited reason. 54% of post-graduates (14.of 26) said the WRLA did not influence presentation development
Do you have any other comments?	
No undergraduate s responded	Post-graduates gave the following useful feedback • "needs to be carried out frequently in class" • "effective and can be used in any problem solving situation"

Reflections of the subject co-ordinator

By using the online work-ready teaching and learning resources a Subject Co-ordinator can easily search for and with little time and effort find an appropriate tutorial activity and download all the associated resources needed to teach the activity. The quality of these searchable work-ready activities is built-in as each activity included in the matrix had been through a review process by various members of the project team, academic staff, and administrative staff and consultants)

The *Teamwork: Group Problem Solving* WRLA was undertaken to provide students with a framework for group decision making to use in their group assignment. It was envisaged that if the students are making better decisions as a group then the end product (the assessable item of work) would be of more consistent quality rather than a mix of ideas, structure and layout that shows individual contributions rather than a cohesive group effort.

The WRLA worked well in all three subjects. The ability to contextualize activities to align with subject material being covered was the key ingredient to this. While some student comment reflects a lack of detail in the case scenario or the relevance of the case scenario to the subject, this is in fact another aspect of the particular group problem solving WRLA being undertaken, that is, scoping out the exact nature of the problem. The ability to change the case scenario to be more aligned with subject content is also quite simple. The only additional work required is to find the new scenario and potentially change some wording in the questions as all other components of the WRLA remain the same.

From a Subject Coordinators perspective incorporating the *Teamwork: Group Problem Solving* WRLA was a beneficial change to the subject design. The feedback obtained from the students was very positive as immediately after the activity approximately 96% of post-graduates and 92% of undergraduate s found the activity to be useful. After the completion of their team task at the end of the semester 92% of post-graduates and 67% of under-graduates still considered the activity useful.

There were few problems encountered during the incorporation of the WRLA into each of the subjects. With the WRLA being a one hour activity it was straightforward to run the WRLA as each of the subjects had a tutorial class dedicated to team formation and once the teams were formed it was the appropriate time to conduct the WRLA. While some students questioned the lack of detail in the case scenario, the idea behind the WRLA is that students follow the process or framework to enable them to make better decisions as a group. The perceived 'lack of detail' allows for more options to be put forward by the group and hence a more thorough discussion to arrive at a consensus to enable the group's best ideas to be identified.

Lessons learnt from the case study implementation

The IT subjects covered in this paper are the first subjects to incorporate a WRLA into their design and overall the positive student feedback is very pleasing. For the subject coordinator some of the student comments show that the WRLA undertaken is based on industry practice and therefore provides students with relevant skills to take with them into employment.

As the WRLA was found to be positive by the students in the IT Management subjects, a group problem solving WRLA will become a feature of these subjects in ensuing semesters. However, the design of the activity could be changed to provide an improved learning experience for the students. The WRLA could be taught over two weeks with team formation, the activity overview and the handouts being provided in one week and the actual WRLA facilitated the next week. This change should give the students more time to understand the WRLA and be better prepared to undertake the group problem solving activity.

Of particular interest to the authors were the differences between the postgraduate and undergraduate subjects. This is extremely important as initially the *UTS Work-Ready Project* focused on undergraduate programs. The findings show that undergraduate students appear less concerned about work preparedness than their postgraduate counterparts. There are several areas for consideration in respect to this:

1. There were a high number of full-time international students (approximately 75%) in the two postgraduate subjects and this may be an influencing factor as international students see any endeavour to provide workspace knowledge and skills as beneficial to their future.

2. The undergraduate IT subject is a final year elective and by this stage of their course many students at UTS are combining part-time work with their studies. Thus they may not consider work ready activities provide any 'value' as they are gaining professional skills and exposure through their part-time work. This view is supported by information obtained in the pilot study where a part-time student, in response to the question on whether the WRLA influenced their assignment, commented "no, but that could be because I work fulltime and already use these processes and understand how to work in a group".

Postgraduate students were more forthcoming in the open-ended questions as the majority gave reasons behind their Yes / No answer. This is in stark contrast to the undergraduates who gave little or no

explanation to accompany their Yes / No answer. This suggests that undergraduate students are nonchalant towards entering the workforce compared to postgraduate students.

Important feedback obtained via the surveys suggests that 1) more work is needed to ensure activities have the correct depth-of-content to ensure successful outcomes are attained by all participants and 2) consideration must be given as to which category of students (for example full-time or part-time, undergraduate or post-graduate) make the best target for undertaking a specific WRLA. For future cohorts of students the surveys regarding the usefulness of the WRLA should include additional questions on student enrolment status and work experience.

Conclusion

This paper has presented an overview of the *UTS Work-Ready Project* and the integration of an IT profession contextualized teamwork collaborative decision-making WRLA into the design of three IT Management subjects (two postgraduate and one undergraduate). The ability to collaborate with others is an essential skill for anyone entering the workforce as team-based work and project work is widespread in most organizations. Therefore learning about a collaborative decision-making framework can only assist students in their transition from student to employee and team member.

From a Subject Coordinator's perspective the integration of the WRLA was a beneficial change to the subject design. Embedding was a relatively simple task due to the online availability of the teaching and learning resources needed for curriculum integration. The activity was already contextualised to the IT profession and so 'fine tuning' was not time consuming.

The experience gained through university work-placements is crucial for students entering workspaces after graduation. Such 'real-world' work experience cannot be duplicated in the existing university curriculum, nevertheless, improving the learning of professional attributes is a step in the right direction. The *UTS Work-Ready Project* supports such curriculum renewal through the online availability of professionally contextualised teaching and learning resources.

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