Embedding non-technical skills into the accounting curricula

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Abstract

This paper aims to illustrate and disseminate examples of strategies to embed non-technical skills into the accounting curricula. As part of a survey to universities to determine the relative importance of identified non-technical skills in their curricula, an invitation was given to supply examples of the embedding of these skills. The academics were then interviewed and together with unit outlines and other documentation provided, the strategy was documented with follow up interviews and other communications to verify the accuracy of the documentation. The non-technical skills most commonly embedded in the curricula were team work and oral and written communication. Non-technical skills were either embedded in one unit or across a year or program level. Several academics used 'real world' experiences to embed non-technical skills. Outcomes observed ranged from increased student satisfaction, increased employability, improved attendance in lectures and tutorials and improved performance in examinations. Challenges faced in implementing the strategies related to resourcing, mobility of staff and the difficulty of attributing improvements to that strategy alone. The strategies documented will contribute to the embedding of non technical skills into accounting curricula by providing academics with trialled examples. By sharing best practice in this manner communities of practice will evolve to enhance the accounting education experience for all students. This study is the most comprehensive study of its nature since the Mathews Report in 1990. While some of the strategies might have been written up individually, the collection of strategies available for dissemination to the accounting academic community has not.

Keywords: non-technical skills; embedded strategies; curriculum and pedagogy; accounting education

Paper categorisation:　　　Research paper

1. Introduction

As an outcome of an Australian Business Deans Council Teaching and Learning Network recommendation, a scoping study, 'Business as Usual' was undertaken (Freeman et al. 2008). This study recommended a range of key areas requiring investigation in order to improve business education across Australia, leading to a number of ALTC grants to support such investigations. Although most related to business education generally, one was specific to accounting education, namely 'Accounting for the future: more than numbers' (Hancock et al. 2009) which addressed the non-technical skills required of accounting graduates into the future. The study used the skills as identified by the Business Industry and Higher Education Collaboration Council (BIHECC) 2007, namely communication, teamwork, self management, problem solving, initiative and enterprise and planning and organisation

This study was published in two parts; Volume 1 identified the non-technical skills and determined the views of stakeholders on their relative importance. Volume 2 documented eighteen strategies provided by universities implemented to embed these non-technical skills. This paper focuses on those strategies.

2. Literature

Change is a significant characteristic of the environment in which professional accountants work and the past decade has seen many challenges for the accounting profession. Change requires professional accountants to maintain and develop new and/or more specialized knowledge and skills throughout their careers (IFAC 2009; Reckers 2006). In addition, the combination of heightened market forces and corporate failures and scandals has led to decreased public trust, increased regulation and to questions about the standing of the

accounting domain as a profession (Gardner, 2005). This challenging environment provides an opportunity for accounting educators to play a significant role in sustaining and enhancing the status of accounting as a profession through practice-related scholarship and effective teaching (Wilkerson, 2010). Colby and Sullivan (2008) have argued that 'professional schools' should serve as 'trustee institutions' for the integrity of their field. Educational preparation should integrate three broad spheres – the learning of theory and technical knowledge, the development of practice skills and the formation of professional identity and normative purpose (Gardner and Shulman, 2005).

Concerns that universities are not producing graduates equipped for their roles in the world of work is ongoing (American Accounting Association Committee on the Future Structure Bedford Committee, 1986; Matthews et al, 1990; Albrecht and Sack, 2000; Kavanagh & Drennan, 2008; Bui & Porter, 2010; Grant Thornton, 2010). Today in higher education globally, graduate attributes are recognised as a critical outcome of modern university education. This is particularly relevant in the context of professional accreditation requirements, program standards (ALTC, 2010) and the employment agenda of the federal government. Despite this Guthrie (2010) suggests that accounting education still faces challenges such as lack of funding, high casualisation of academic staff, high staff student ratios and insufficient resources.

The rapid development and ever-changing needs of the global business environment have resulted in evolutionary changes in the skills required by accountants to add value for their clients (Kavanagh and Drennan, 2008; De Lange, et al. 2006). Few would deny that the role of the traditional accountant as a mere score-keeper is no longer a viable contributor to business (Jackling & De Lange 2009). While technical accounting competencies remain

obligatory for the professional accountant, development of students' non technical skills such as critical thinking (Mohamed & Lashine, 2003; Hurt, 2007) and the ability to be forward thinkers, skilled strategists and team players (Jones & Abraham, 2008) is required for career success.

Other researchers stress the importance of Interpersonal skills and Communication skills. Interpersonal skills include the ability to organize and delegate tasks, motivate, resolve conflicts, and enhance client relations and decision making (Awayiga et al 2010; Ballantine & Larres 2009; Jones & Abraham 2008; Kennedy & Dull 2008).

Communication skills are concerned with the ability to transfer and receive information easily (Andersen 1989; Ballantine & Larres 2009; Kavanagh et al. 2009; Awayiga et al. 2010). In addition, communication skills include listening effectively to gain information, understanding opposing points of view, and having the ability to present ideas orally or in writing and discuss matters with others (Rebele 1985; Jones & Abraham 2008; Hancock et al. 2009; Fortin & Legault 2010).

Several studies have explored the development of skills in accounting graduates. Stoner and Milner (2010) stated that accounting educators should work closely with various stakeholders to prepare graduates for lifelong learning and successful business careers. Because current teaching models are no longer considered adequate (Jackling 2005; Kavanagh and Drennan, 2007), universities are actively seeking updated and contemporary strategies to teach and enhance professional accounting competencies. Jones (2010) examined the nature of generic skills and presented a conceptual overview for theorising generic skills. Fortin and Legault (2010) found that using mixed teaching methods promoted generic skills of accounting students more than traditional lectures; and Mohidin et al. (2009) advocated the importance

of adopting teaching methods that help students better understand accounting as a discipline. Howieson (2003) suggested that accounting educators need to address the expected shift in accountants' skills by developing courses and teaching models that are more interdisciplinary and analytical in their orientation.

Sin et al. (2007) perceive all non technical skills required of accounting graduates to have a linguistic, hence a communication dimension. Their review of innovative interventions to improve written communication of accounting students includes Friedlan (1995), who made 'extensive use of contextualized mini-cases . . . class room discussions and critical-thinking skills' (Friedlan, 1995:147) and demonstrated the impact on student perceptions of accounting practice of interactive teaching (p. 147). They also refer to Mohrweis (1991), English et al. (1999), Ng et al. (1999), Ashbaugh et al. (2002), and Tindale et al. (2005), all of whom used writing components additional to the regular accounting curriculum and/or additional detailed feedback on the non-technical elements of the learning (Mohrweis, 1991; English et al, 1999; Ashbaugh et al, 2001; Tindale et al, 2005:147). Lynn & Vermeer (2008) employed a structured writing program that was representative of the writing experiences that students, as recent accounting graduates, could expect in the workplace (Lynn & Vermeer, 2008). Sloan & Porter (2008) report on a program to provide English language support to international business students, by developing the CEM [contextualisation, embedding and mapping] Model. The program promotes and sustains collaboration between the language instructors and the subject specialists so as to increase students' understanding of the link between the support program and the subject-specific module.

Fortin and Legault (2010) describe a mixed teaching approach involving a ten week training period at a mock accounting firm exposing students to a wide variety of tasks and a

combination of education methods aimed at fostering generic skills for professional competency.

In the recent study B Factor project (de la Harpe et al, 2009) 1064 academic staff across disciplines in 16 universities responded to questions about academic staff beliefs on graduate attributes. The majority of academic staff (73%) believed that graduate attributes should be included in the curriculum and should be an important focus for their university. Despite this, most academic staff believed that the most effective method for developing graduate attributes was by integrating them into the curriculum and being taught by the discipline teacher and a specialist with skills in the relevant attribute as with past research (Ramsden et al, 1986; Jackling and Wigg, 1997; Jones and Abrahams, 2007; Kavanagh and Drennan, 2008; Willcoxsin et al, 2010). Generally academics felt that graduate attributes were least effectively developed when integrated into a capstone course or developed by students independently.

A further outcome of the B Factor project (de la Harpe, et al., 2009) was that academic staff reported that their personal expectations or views, their willingness and confidence had the most influence on whether they would teach or assess graduate attributes, rather than the views of key stakeholders, such as students, the university, industry or community. In general, academic staff are not generally confident in being able to teach or assess graduate attributes (Kavanagh and Drennan, 2007, Green et al, 2009). Academic staff suggestions for overcoming obstacles to teaching and/or assessing graduate attributes in their courses as part of their normal teaching/assessment role were most likely to relate to increasing academic staff numbers and allocating more resources to teaching and providing more professional development opportunities (de la Harpe et al, 2009).

So the question becomes: *what strategies are accounting academics adopting in their courses or programs to embed and develop non technical skill?*

In the next sections details of the study to define these strategies and strategies identified by academic staff are discussed.

3. The study

The Accounting for the future: more than numbers study (Hancock et al. 2009) involved an Australia wide investigation[i] into the future non-technical skills required of accounting graduates and was conducted in several phases. The first phase was to interview stakeholders to determine the needs of employers. The second phase interviewed both current students' and recent graduates' views to determine their perceptions of the appropriateness of the non-technical skills development they received at university. The third phase surveyed academics within universities to determine their ranking of the importance of non-technical skills and their rating of the development and assessment of these skills in the accounting program. Finally, and forming the subject matter of this paper, academics were invited to offer examples of strategies to illustrate the embedding of non-technical skills into the curricula. Once these examples were offered the academics were interviewed by project team members to obtain details of the strategy and the non-technical skills addressed, learning and teaching rationale, assessment, evidence of merit of the strategy and challenges faced in implementation. There were several iterations to ensure the notes formed on the basis of interviews and responses were an accurate and fair representation of the strategy. A full listing of academics and their university affiliations is contained in Appendix 1 (Hancock et al, 2009).

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4. Strategies

The study collected strategies to embed non-technical skills within the curricula from 18 academics teaching accounting in universities across Australia, 17 of which are reported in this paper. The strategies were in the main embedded within a particular unit of study, however some were delivered at the program level either as a stand alone unit or spread throughout the majority of the units in the program. There were also strategies that embedded the non-technical skills through 'real world' experiences with industry and/or the profession. The strategies concentrated on two skills: teamwork and communication.

4.1 Team Work

Gabbin & Wood (2008) highlight the fact that the use of collaborative learning has grown as a strategy in accounting education in recent years. Hwang et al (2008) demonstrate that cooperative learning is a more effective learning and teaching strategy for students raised and educated in a passive learning environment (traditional lectures).

Kennedy & Dull (2008) provide assignment suggestions on how to integrate specific meeting management techniques into team assignments in particular accounting disciplines (e.g. audit, managerial, systems, or tax).

Lightner, Bober & Willi (2007) used access to technology and innovative collaborative opportunities in a graduate level financial accounting course to create an environment capable of engendering student engagement, with a focus on group processes and the dynamics of teaming rather than achievements.

Riordan, Riordan & Kent St. Pierre (2008:190) point out that accounting educators have neglected to subject group work to critical analysis, most specifically in relation to the

phenomenon of 'groupthink'. (Groupthink causes group members to passively absorb the dominant ideas and values of the group, resulting in ethical and intellectual dumbing down of the group and often in poor decision making. They suggest general strategies to counteract groupthink, as well as remedies for specific situations).

Perhaps the most significant development in cooperative learning/team learning is Team-based Learning (TBL) (Michaelsen et al, 2004). The instructional strategy underpinning this approach is a set of sequenced and linked learning activities for each lesson that work together synergistically to create a high level of energy that students can then apply to the learning task in small groups in-class; the team-based learning revolves around team development, a social unit quite different from groups (characteristics of teams are a high level of individual commitment to the welfare of the group and a high level of trust among the members of the group). The literature reports on the success of the technique in a variety of disciplines (for example, medicine, nursing, health sciences, general embryology) and it is currently being used in accounting education (for example at University of Sydney and at UWA).

The next section examines the strategies that academics are currently using in accounting in the areas of teamwork and communication.

4.1.1 Strategies: Team work in tutorials

Strategies that embedded teamworking skills did so either within non-assessable work through tutorials, or in assessable items such as assignments or presentations. Strategy 1 by Michele Leong at the University of Western Australia (UWA) Business School used joint in-class tutorial presentation to improve learning and participation in tutorials. The premise was

that joint preparation would enhance the team's learning over that of an individual as the joint preparation could focus on problem solving and communication skills in a team based environment. Evidence of the effectiveness of the strategy from students was that they enjoyed the preparation and learned more as members of a team. Tutors believed that tutorial participation improved and that the quality of responses to theoretical questions in exams improved as a result of the strategy.

Strategy 5 by Leo Langa at Latrobe University used joint out of class tutorial preparation whereby students not only worked in groups out of class, but rotated the leadership of the group on a weekly basis. This was also based on the premise of team based learning being enhanced over that of individual learning, with the addition of leadership development with the rotation of leaders. Students commented that they enjoyed the teamwork while academics believed tutorial participation increased, relationships between students improved and the quality of responses to theoretical examination questions showed greater depth than in previous years.

4.1.2. Strategies: Team work in assessable items

The second group of team work strategies used assessable items such as assignments and presentations to embed the strategy into the curricula. There were several strategies that used team work in this manner and a selection will be provided to illustrate the development of the non-technical skill of teamwork.

Strategy 4 by David Holloway at Murdoch University used mapping, embedding and scaffolding of teamwork by building it into learning activities across three accounting units at the three levels of the degree. The team work is embedded in the program by having the three

units, taken by three different academics, use group work in a scaffolded manner beginning with a first year small group project, building to a larger project and culminating in third year using team work in the major capstone unit. The student evaluations improved after the introduction of the team based work was embedded into the program and specific positive feedback was made in the student evaluations.

Strategy 9 by Olivera Marjanovic at the University of Sydney used the Team Based Learning (TBL) technology to develop team work in the strategy of problem based learning and reflective practice in Business Information Systems. {The technology of TBL is gaining broader acceptance at a range of business faculties across the country after it was showcased at the Australian Business Deans Council (ABDC) Teaching and Learning Network meeting held in at UWA in February 2008, with follow-up seminars and workshops held around the country}. The principle of the strategy was to enable students to develop and enhance their problem solving and communication skills through the use of team based activity using the TBL technology. As well as assessment of the group project, assessment was also dependent on the team based learning activities and the progressive mini-exams undertaken by individual students which then provided 50% individual assessment and 50% team based assessment. Students indicated strong support and enjoyment of the strategy as well as surprise for what they can achieve with it. Employers continue to support the unit as industry partners.

Strategy 11, planning, organising, self management, team work and lifelong learning by Julie Foreman of Swinburne University of Technology used the vehicle of a team based assignment with significant milestones that the groups had to meet to assist with their planning and time management skills. Students were also required to write a reflective piece

on the skills and expertise that each member brought to the group, so those skills could be capitalised on in the project. All pieces of interim assessment attached to the project carry marks, as well as a peer assessment component that carries 25% of the assignment marks. Feedback on the strategy is that time management skills have improved considerably as there are less 'last minute crises to deal with' as students found the strategies forced them to focus on the assignment tasks throughout the semester rather than only at the final due date.

Strategy 12 combined teamwork with oral communications and will be discussed in the main under oral communications, however the team work that was required in both the presentation and the assignment (both assessable items) led to most favourable comments from students about their experience of the unit.

Strategy 14 by Susan Wright at Macquarie University combined problem based learning and teamwork and involves teamwork in the tutorials and in preparation of the assignments and incorporates both oral and written presentations. The unit is a third year capstone unit which requires the group to work together to prepare two oral presentations and a written presentation on the topic. The success of the strategy is indicated by positive student evaluations which highlight improvements in self management and engagement in the course and lecturers' observations that examination performance improved. The challenges were keeping abreast of the developments in the companies students were assigned to study and the ability to find tutors who were able to cover all the required material.

The embedding of team work in the curricula not only reflected work practices, but increased student involvement and engagement in the curricula and had early reports of improvements in the quality of student responses in both assignments and examinations as well as increasing

student enjoyment of the subject matter as reflected in student evaluations. In some cases the team work and the associated assessment milestones led to more effective time and project management skills.

4.2. Communication - Written

The strategies for developing written communication skills fell into two categories. They were either developed in one unit of study or across the whole year or program level.

4.2.1 Strategies: Written communication skills – at unit level

Strategy 8 by Carol Tilt at Flinders University was a combination of academic writing and referencing skills in one unit of study. The objective of the strategy was to improve communication, research, referencing and writing skills together with their understanding of academic integrity. The assignment was in three parts, with the first part encompassing sourcing online databases, the second on academic integrity and plagiarism and the third comprised a piece of writing incorporating the skills developed in parts one and two on sourcing and citing appropriately. Evidence supporting success of the strategy was that referencing skills had improved, students found the assignment interesting and enjoyable, however as most plagiarism evidence is confidential it was difficult to assess whether rates of plagiarism had reduced.

Strategy 17 by Samantha Sin and Alan Jones at Macquarie University integrated core content and communication skills into the first year accounting unit, Introductory Financial Accounting. While undertaking lectures and tutorials for content, students were also required to complete three written assignments related to the topics taught in lectures. The questions, set within a business context, require completion in business document formats, namely a

letter, memo or short report, or relate to an accounting matter addressed in the media. The success of the strategy was demonstrated by a general improvement across all three assignments in all four cohorts of students (but to varying degrees) and students' self assessment. This indicated a drop in overrating indicating students' improved ability to understand the learning objectives; consistent with quality teaching. The results have also been published after peer review in books, journal articles and conference proceedings.

4.2.2 Strategy: written communication skills – at year or program level

In Strategy 13 by Elaine Evans, together with Dawn Cable and Mary Dale at Macquarie University, communication skills were embedded across the Master of Accounting, with 10 of the 13 units embedding the strategy. The Language for Professional Communication in Accounting is collaboration between the accounting academics and language skills experts at Macquarie. The strategy depends on team teaching and team marking of assessments whereby language teachers provide preparatory teaching of communication skills in the accounting classroom, such as essay writing, together with the discipline content. One week after submission of the essay it is returned with comments from both the discipline and language teachers. Students are required to attend an adjunct workshop on the specific skills for the particular essay and may also avail themselves of general workshops on general research skills. Evidence indicates that the combined workshops with discipline and language teachers team teaching achieve the best learning outcomes. There have been improved employment outcomes for the graduates of the Master of Accounting program, Macquarie students have outperformed the national cohort in the Master of Accounting CPA extension program in their pass rates, strategy instructors have been recognised in teaching awards and the strategy is being supported by faculty funds. The challenges however are that the

program is expensive and dependent on ongoing institutional support with sustainability a potential issue when key staff move to other positions.

Strategy 3 by Sue Hrasky at University of Tasmania developed an integrated program across a whole of year level, namely first year. This program addressed the full range of non-technical skills and did so using a combination of tutorials and workshops to encourage communication within and among groups of students, and between individual students and the group. Activities included presentations, working in pairs, use of discussion boards and chatrooms, report and essay writing, short answer responses or multiple choice quizzes. In some units the use of log books or journals assist in the development of reflective practice. In one unit tutorial responses are self-marked and corrected and include explanations, comments or notes recorded in the tutorials. The success of the strategy is reflected in the School receiving the University Teaching Award for the program, improvements in student evaluations, and positive feedback in the evaluations. The challenges exist around resourcing the program, support services for students from non-traditional backgrounds and the teaching population in Tasmania becoming more mobile.

Strategy 15 developed foundation skills development at the first year level as a separate unit rather than embedding the skills throughout the units. This strategy was developed by Audrey Milton from James Cook University. A specific foundation course, Personal and Professional Skills in Business, was developed in which students would develop their non-technical skills for use in other units in the program. A combination of lectures, workshops, group work, case studies, discussions, simulations, reading and key pad clickers were some methods used. A combination of formative and summative assessment was used with the challenges being the

amount of assessment items required and the balance of weighting of non-technical skills against technical skills in assessment.

In the development of written communication skills the gradation of the component parts was evident. Students developed their referencing and academic writing skills within the embedded curricula and in some cases were team taught and assessed on both the content and the academic writing. The skill development across a year level or program required a far greater institutional commitment by way of resource allocation, however the results in terms of learning and employment outcomes were clearly visible.

4.3   Communication - Oral

Strategies to enable development of oral communication skills of accounting students are often linked to communications apprehension studies (Hoffman & Sprague, 1982; Aitken & Neer, 1993; Myers & Rocca, 2001) and to class discussion, (Dallimore et al, 2008:164). The benefits of class discussion, through its 'emphasis on active learning', impact on the development of problem solving and critical thinking skills, as documented by (Dallimore et al, 2004; 2006), who advocate grading class discussion, including students who are cold called (that is, they have not volunteered to participate) so as to 'extend the benefit of in-class discussion to all students' (cited in (Dallimore et al, 2008:163). Active student preparation (in this instance second term American MBA students taking a management accounting course) and participation in class discussion 'can be linked to students' reports of improved oral and written communication skills' and 'discussion can be a useful addition to cross-curricular programs, such as writing and speaking across the curriculum and stand-alone courses, such as public speaking' (p.63).

Anderson and Mohrweis (2008) provide examples of rubrics that are useful in assessing accounting students' acquisition of skills, including writing and oral presentation skills (Anderson & Mohrweis, 2008). Grace & Gilsdorf (2004) utilise 'communication-to-learn' exercises which combine oral communication activities with accounting course content and work. They aim to minimise changes to existing course structure and grading approaches (Grace & Gilsdorf, 2004). The exercises consist of four presentation tasks of increasing difficulty and length (two are one minute each, two are about five minutes each) only three of which are graded. The first is an ungraded self-introduction task for students containing half a dozen facts about themselves, the second is a graded five-minute presentation of a simple accounting exercise assigned to each student, the third a graded one-minute response to an instructor's question, and the fourth a graded five-minute summary of a current business news feature. Whereas each exercise has a slightly different purpose, three of the set tasks 'ground the student in the comfortable territory of technical knowledge' but also 'force the student to communicate this knowledge to outsiders' as well as providing the instructor with feedback on the students' level of understanding (p.169).

4.3.1   Strategy: communication skills - oral

Strategy 12 by Janine Muir from Swinburne University of Technology developed presentation skills, together with teamwork, by way of a group assignment and presentation assessed in two parts; the presentation on presentation skills alone and the assignment for discipline content. The strategy was aimed at developing public speaking skills in all the team members and team working skills through both the development of the presentation and the completion of the assignment. Anecdotal evidence is that the oral presentations improved students' experience of the unit.

Opportunities to practice oral presentation skills for all students provide a valuable resource for students, particularly those reticent to speak out in class. The mandatory nature of the exercise as well as the support mechanisms in the early stages of preparation make the experience worthwhile for all students.

4.4   Real world experiences

While not specifically listed as a separate non-technical skill, the ability to engage in real world cases by applying analytical skills to case studies and engagement with the profession and the industry was demonstrated in some strategies.

April Wright from University of Queensland in Strategy 2 made the Introduction to Management unit interactive and engaged with business practice. Real companies and events were used in the unit, such as the Nokia company in one instance and case studies from the Beijing Olympics in another. Attendance at and engagement in lectures improved, final examination results improved, lecturer effectiveness ratings increased, informal feedback from students improved and the lecturer was awarded the Undergraduate Teaching Excellence Award for the redesign and teaching of the unit.

Steven Dellaportas from Deakin University and formerly the University of Ballarat, exposed the students at both universities to real life experiences in Strategy 6 where he took students to a local prison to interview accountants who had been imprisoned for fraud and related offences. This was offered in the third year Ethics and Financial Services unit where students were able to talk to the inmates about the reasons for and circumstances that led to their fraudulent behaviour. The strategy was used to enhance students' awareness of ethical issues through real world experience. There were significant administrative requirements to

surmount such as approvals through the university administration, the justice system as well as occupational health and safety and security issues at the prison. In addition to the novelty and excitement of the activity the poignancy of the situation that once successful accountants (as the students were aspiring to be) could take this criminal path was not lost on the students.

Glen Hutchings from Curtin University in Strategy 7 developed meaningful engagement with practitioners whereby students develop problem solving skills while working on real case studies developed by the lecturer using real business issues and contexts. The operations of the business on which the case study is based are recorded on a DVD supporting the case study and bringing the business and its environment to the students, although in some semesters actual site visits are possible. Practitioners from one of the Big 4 accounting firms then engage with the students to stress the skill set the case study projects and the non-technical skills required in professional practice to be able to address such issues. Students can, in addition to the assessable item, voluntarily prepare a business plan for review by the accounting firm for competitive assessment. Certificates are awarded to the top students and there are opportunities for accelerated recruitment into their graduate programs. The success of the program is adjudged by the positive feedback from students, the continued support of the chartered firm and teaching awards (seven so far) related either in whole or in part to the teaching of this unit.

A strategy that uses technology to simulate real world experiences is Strategy 18 by Jennifer Kofoed and Nona Muldoon at Central Queensland University. The 'Second Life' environment is used as a platform for machine-based cinema (machinima) to provide a learning context in which both internal and off-campus students can solve dilemmas against a backdrop of authentic work based activities and practices to enable them to develop higher

order thinking skills, communication, teamwork and problem solving. The success of the program is evidenced by greater engagement of students, much lower failure rates, improvement in the quality of examination paper responses, increased attendance in class sessions and active discussions, greater use of the unit website as well as recognition of the lecturer in teaching awards at the faculty and university, and invitations to present work at other business schools across Australia. The use of 'real world' experiences enriched the curricula by not only embedding non-technical skills but also by doing so within an actual or simulated business environment. Students responded exceptionally well to the strategies and employers and the profession, to the extent that they were involved, found the benefit to be twofold in being able to offer their expertise to the accountants of the future and having a pre-recruitment opportunity.

A final strategy that engages students in real life activities is that contained in Strategy 16 by Susan Ciccotosto from James Cook University who applies critical thinking strategy to accounting theory topics and issues through the use of online debates.

5. Conclusion

The study confirmed the importance and effectiveness of embedding non-technical skills into the curriculum. It also showcased a range of strategies that accounting academics across the country are using to prepare 'work-ready' graduates and to provide accountants equipped for the future challenges. The strategies are in varying degrees of maturity with some being implemented recently and without long term evaluation of the strategy, while others have been in place for many years and have documented evidence of the success of the strategy. The success of the strategies themselves as they are embedded in the curricula depend for their longevity on a number of factors; not least of which are the institutional and industry

support, and the ability of the strategy to survive changes in academic champions. The more holistically these strategies can become embedded in the curricula and become part of the institutional culture, the greater the potential success will be.

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Appendix 1

Academics, with affiliations, that provided the strategies to the ALTC Project.

No.	Name of Strategy	Author(s)	University
1	Joint in-class preparation	Michele Leong	University of Western Australia
2	Interactive and engaging in problem learning	April Wright	University of Queensland
3	Integrated first year units	Sue Hrasky	University of Tasmania
4	Mapping embedding and scaffolding teamworking	David Holloway	Murdoch University
5	Joint out of class tutorial preparation	Leo Langa	Latrobe University
6	Prison field trip	Steven Dellaportas	Ballarat then Deakin University
7	Engagement with practitioners, business plans and case studies	Glen Hutchings	Curtin University
8	Written communication research and referencing skills	Carol Tilt	Flinders University
9	Problem based learning and reflective practice in Business Information Systems	Olivera Marjanovic	University of Sydney
10	NA		
11	Planning, organising, self management, team work and life long learning	Julie Foreman	Swinburne University of Technology
12	Presentation skills and team work	Janine Muir	Swinburne University of Technology
13	Communication	Elaine Evans Dawn Cable Mary Dale	Macquarie University
14	Problem based learning and teamwork	Susan Wright	Macquarie University
15	Foundation skills development unit	Audrey Milton	James Cook University
16	Critical thinking development strategy	Sue Ciccotosto	James Cook University
17	A strategy to integrate core content and communication skills development	Samantha Sin and Alan Jones	Macquarie University
18	Cognitive apprenticeship in professional auditing using 'Second Life'	Jennifer Kofoed and Nona Muldoon	Central Queensland University

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[i] The study was funded by the Australian Learning and Teaching Council and involved five researchers from five universities from five Australian states.