

# **Using the case study method to develop generic skills: An analysis of student and tutor perceptions**

## **Abstract**

Amid calls from the accounting profession and accounting educators for a syllabus that would develop generic skills as well as technical competence, the course supervisor of a final year management accounting course made changes to the tutorials. It was hoped that weekly one-page assignments, presentations and discussions of assigned cases would develop communication, team work, problem solving, critical thinking, conceptual thinking, time management and research skills.

This research comprised a survey of current and past students' perceptions of their learning of generic skills in the tutorials, as well as the views of the current tutors. Both students and tutors felt that the format of the tutorials and assessment enabled the development primarily of problem solving and critical thinking, but also to a high degree of team work, time management, communication and conceptual thinking. Research skills were the least developed. The same skills were perceived to be useful in an accounting career.

**Keywords:** case study, generic skills, students, tutors, management accounting

## **Introduction**

Accounting as a discipline has evolved in the last century and a half. To begin with, aspiring accountants were trained “on the job”, as articled clerks. Then as institutions of higher learning, such as polytechnics and universities, became recognised as providers of training for accountants, accounting education emphasised technical content. Recently, accounting education has begun to focus on providing students with generic skills that will equip them for their working lives.

A decade ago, Adler and Milne (1997b) were critical of accounting education in New Zealand, claiming that, in response to demands of the accounting profession, accounting courses still over-emphasised technical content and under-emphasised generic skills such as oral communication and group work. It could be argued that the accounting profession and employers (e.g., chartered accountancy firms and businesses in the corporate sector) do have a role in accounting education, as they are the “customers” of universities and the students are the “products”, to be shaped and moulded to meet the requirements of the customers. However, this extreme view is countered by those arguing for a focus on enhancing the students’ ability to learn (Hanaray and Robertson, 2002; Tan et al., 2004). Maybe accounting programmes need to provide a balance between the demands of employers and the principles of an egalitarian society.

The influence of the accounting profession on accounting education has been well-documented and extensively-studied (see Adler and Milne, 1997b). For example, in their study of emerging trends in UK higher education, Saunders

and Machell (2000) found that changes in curricula were introduced because of a perceived demand from employers. These changes included increased emphasis on transferrable skills, such as communication, application of numbers, the use of information technology, team work, planning and time management. Other studies have also reported a demand for generic skills by the accounting profession and employers (see, for reviews, Rebele et al., 1998; Apostolou et al., 2001). An emphasis on generic skills in accounting education should enhance the employability of students and their ability to be life-long learners (Tan et al., 2004).

Generic skills have been defined quite broadly. Ballantine and McCourt Larres (2004) described generic skills as consisting of cognitive, affective and behavioural elements. Cognitive skills are concerned with thought processes, such as problem-solving, critical thinking and conceptual thinking. Behavioural skills are concerned with actions, such as written and oral communication, team work, time management and research. Affective skills are concerned with disposition or emotion and are present in the aforementioned skills. These generic skills are essential for all learners including accounting students and accountants (Nikolai, 1996; Baril et al., 1998; Ballantine and McCourt Larres, 2004; De Lange et al., 2006). Kimmel (1995) argued that cognitive and affective skills should be included at the introductory and intermediate levels of accounting courses, whereas behavioural skills should be included at the advanced level.

The development of generic skills in accounting education has been debated and studied with increasing frequency. Studies often compare and contrast

the views of academics, practitioners/employers, and students/graduates. Hirsch and Collins (1988) found that academics and practitioners placed more importance on generic skills than students. Novin et al. (1990) discovered that management accountants believe that graduates are deficient in communication skills. Tan et al. (2004) found that practitioners and academics perceived problem solving, thinking and various communication skills to be more important than other skills. These studies have led to normative arguments for increased emphasis on generic skills in accounting education (Rebele et al., 1998; Fallows and Steven, 2000).

Rebele et al. (1998) reported that development of generic skills has become important in terms of the curriculum and research into accounting education. Studies have investigated the perceived importance of generic skills compared to the ability of students. Morgan (1997) found that academics and practitioners rated the importance of written and oral communication skills higher than their perception of the ability of graduates. Similarly, Nabi and Bagley (1998), Arquero Montaña et al. (2001), and Lin et al. (2005) found that the importance of generic skills was rated higher than the ability of students/graduates by academics, practitioners/employers and students/graduates. While these findings have led to much change in the accounting curriculum (as discussed below), they are not particularly surprising and perhaps should not be over-emphasised. As academics and practitioners are hardly likely to say they do not desire generic skills, the importance of generic skills will always be rated highly.

The accounting curriculum has changed significantly over the last 25 years. Much of this change has been to accommodate generic skills. The task for the accounting educator is difficult as there is limited time in an accounting programme. This creates a trade-off between teaching technical content and building generic skills (Adler and Milne, 1997a; Morgan, 1997). Accounting educators have put forward a variety of methods for developing generic skills. These methods include, from most to least commonly used: essays (Ng et al., 1999; Tempone and Martin, 2003), case studies (Adler and Milne, 1997a), class exercises (Grace and Gilsdorf, 2004), group work (Cadiz Dyball et al., 2007), problem-based learning (Adler and Milne, 1997a), and including a module on generic skills (Morgan, 1997; Gammie et al., 2002). While the merits of these methods are open to debate, the case study method has been widely advocated (Kimmel, 1995; Hassall and Milne, 2004).

The case study method was first introduced at Harvard Law School in the late nineteenth century and emulated at the newly formed Harvard Business School in 1910 (Jennings, 1996). Academics perceive many benefits from the case study method, such as realistic assessment (rather than abstract), encouragement of thinking (rather than rote learning), and stimulation of interest in the subject (Lewis, 1998). Further, students are challenged by cases to identify and analyse problems, design and evaluate alternative solutions, and communicate recommendations, all of which build generic skills (Hirsch and Collins, 1988; Campbell and Lewis, 1991; Kimmel, 1995). As Rebele et al. (1998) note, when cases are student-led rather than teacher-led, students are actively engaged in learning and in developing generic skills, particularly critical thinking and communication skills.

However, there are problems with the case study method. Argyris (1980) argued that the teacher may unintentionally steer learners towards their predetermined solutions. Also, learners are not convinced that there are 'no solutions' to case studies, as the teacher will often conclude discussions by revealing a solution. Thus, Argyris (1980) argued that using the case study method may inhibit double-loop learning. Similarly, Hoskin (1998) points out that the case study method may be indoctrinating learners in a certain way of thinking, that is, modern managerialism (e.g., managing by the numbers). Further, Lewis (1998) highlights some of the practical issues, such as the difficulty in obtaining relevant and reliable case studies, subjective grading in assessment, and free-riding in group activities. However, Hoskin (1998) concludes that the case study method has been predominantly successful and it is effective in engaging learners in the process of learning.

There is a general perception amongst academics that the case study method will build the generic skills of students (Lewis, 1998; Adler et al., 2004). For example, Jennings (1996) found that UK academics perceived that case studies were most effective in developing communication and interpersonal skills and less effective in developing strategic analysis and thinking. While students also perceive the benefits of the case study method (e.g., Weil et al., 2001), students may believe that certain generic skills are under- or over-emphasised. For example, Sawyer et al. (2000) found that NZ students perceived problem solving and writing skills to be appropriately emphasised, whereas they felt that team work, research and oral communication skills were over-emphasised.

While some recent studies, such as Arquero Montaña et al. (2004), have found that the use of case studies is effective in enhancing the generic skills of students, other studies have found some surprisingly results. Adler et al. (2004) hypothesised that those students who participated actively in class would develop a more balanced learning style than those who did not, but their findings did not support their hypothesis. Surprisingly, non-actively involved students did not stay the same, they became less balanced. Adler et al. (2004) argue that their findings imply that the use of case studies does not automatically lead to the development of generic skills, particularly when case studies are teacher-led, rather than student-led. Further, Ballantine and McCourt Larres (2004) found that relevant work experience had no influence on the perceived benefits of using case studies and that cognitive benefits were rated higher than the affective and behavioural benefits. Also, communication, written and library skills were rated lowly compared to other benefits, which casts doubt on traditional perceptions of benefits of using the case study method.

Although the use of case studies to develop generic skills has been researched, the findings are not yet comprehensive or conclusive. Apostolou et al. (2001, p.44) suggests that future research “should be interested in how students learn... [and how] various pedagogical innovations affect student learning”. Similarly, Watson et al. (2003) found a lack of research in curriculum reform and core competencies. While studies have identified a gap between the generic skills required by employers and possessed by graduates, few studies have examined how to close the gap.

This research examines how the case study method and particular methods of assessment have been used to develop the generic skills of students. A final year management accounting course was changed specifically in order to develop these skills, thus providing an example of curriculum reform and adding to the scant literature.

Adler and Milne (1997b) report on the building of generic skills in a management accounting course. As Johnson and Kaplan's (1987) 'Relevance Lost' spurred developments in management accounting, management accounting courses shifted their emphasis from cost accounting to performance management. Contemporary management accounting emphasises analysing, interpreting, and acting on the numbers, rather than merely calculating them. Predictions on the future of management accountants emphasise their role as team members (Pierce and O'Dea, 2003; Friedman and Lyne, 1997), analysts (Clark and Baxter, 1992; McNair, 1996) and innovators (Ezzamel et al., 1997), rather than "bean-counters". This research studies students and graduates of a management accounting course which has been designed to prepare students for this changing role.

## **A Course in Advanced Management Accounting**

### **Background information**

As was happening in many other countries, in the late 1980s and early 1990s the accountancy profession in New Zealand (NZ) was developing programmes to determine the competencies displayed by accounting graduates desiring to obtain membership of the professional body (then called the NZ Society of Accountants, now the NZ Institute of Chartered



Accountants) (Adler and Milne, 1997a, b). The Final Qualifying Examination (FQE) was introduced in 1989, testing the written communication of candidates on topics such as "the structure, standards, ethics, and current issues facing the profession" (Hay and Maltby, 1997, p. 169). In 1998 the programme developed into the Professional Accounting School, a programme of workshops and two Professional Competence Examinations, during which the following competencies are developed and assessed:

the ability to identify and solve business problems; communicate effectively both verbally and in writing; demonstrate ethical behaviour; apply critical thinking; access, analyse and synthesise information; work effectively in a team and, when required, take a leadership role; integrate knowledge across the accounting sub-disciplines and a range of other business disciplines; maintain currency of technical skills (NZICA, 2007).

### **Changes in 1991**

One of the examiners and several markers for the FQE were lecturers at the University of Canterbury and some were teaching on the Advanced Management Accounting (AFIS322) course. Noticing the inability of many of the FQE candidates to communicate in writing, and being party to the discussions about developing the other competencies listed above, the AFIS322 course supervisor decided to make changes to the tutorials for the course in order to develop some of the competencies while students were still at university.

During my time as a marker for the Institute's final qualifying exam I was concerned about the poor standard of comprehension of the exam questions and the quality of the written answers in many of the papers I marked. So I decided to try in 322 to "force" students in tutorials to wrestle with cases to give them some experience with

reading a case and then hopefully with coming to grips with the key issues of the case.

I frequently mentioned in all my classes that to be an able accountant one has to be able to write convincingly about many accounting topics and to support the comments with a verbal presentation. So the presentations were introduced to give students the opportunity to experience what it was like to stand up in front of group to present and then answer questions on the topic presented. While many found the presentation stressful, a substantial number commented that they had not had previously had to do a presentation. (Source: Graeme Purchas, AFIS322 course supervisor, 1991-2003)

### **Structure of course**

Since 1991 the tutorials have been based on case studies which the students have to consider before class. Assessment was gradually developed until 2003, from which time it comprised:

- *one page assignments*, summarising the main issues of each case and providing a recommendation – these are written before the tutorial and form the basis of discussion in small groups during the first 15-20 minutes of the tutorial time; they are also graded by the tutors;
- *class participation* in the form of active discussion in small groups and asking questions of presenters;
- a professional *presentation* of one of the cases in a two or three-person team, using appropriate visual aids.

The cases, which are aimed at final-year and MBA students, have been primarily selected from Anthony and Govindarajan's (2007) *Management Control Systems*<sup>1</sup>. According to Kimmel's (1995) classification framework, the cases are advanced. Fifteen cases are used in tutorials throughout the course. Cases are selected on the basis of their relevance to topics covered in the course (such as business strategy, performance measurement, costing, etc.), length (between 5 and 15 pages), and difficulty. Since students are seldom exposed to case studies prior to this course, the first two cases are not assessed.

Although cases are selected on the basis of their relevance to a particular topic, the questions given by case authors are not always relevant. Therefore, the majority of the questions are rewritten. For each case, four questions are assigned, three questions to be discussed in students' one-page assignments, and all four questions to be discussed in students' presentations. In general, the questions ask students to identify and evaluate problems, discuss alternative solutions and make recommendations. Usually, the fourth "presentation only" question is broader in scope than the other questions, and requires students to undertake some research (such as reading journal articles).

Tutors meet with a lecturer each week to discuss that week's case study. At these meetings the lecturer will ask the tutors questions, rather than giving them answers, to ensure that the tutors are prepared for the coming week's

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<sup>1</sup> Various editions of this textbook have been used in AFIS322: Advanced Management Accounting since 1991.

tutorials. Although the lecturer prepares a suggested solution for each case study, tutors are not given the solution until the conclusion of the meeting. The final suggested solutions contain alternative solutions and are updated as tutors and students come up with new ideas.

### **Development of generic skills**

Each week students are expected to read the case study and prepare a one-page assignment, although only the best five assignment grades are counted towards the final grade. Typically, students complete between five and ten assignments. In tutorials, a team of two or three students are expected to present their analysis and recommendations to their tutorial class. During each tutorial, students are expected to participate in group discussions and ask questions of the students who are presenting the case. The case studies and accompanying tutorial activities and assessment are designed to build the generic skills of students (see table 1).

[insert table 1 about here]

The one-page assignments build the generic skills of students in a number of ways. Most commerce courses only irregularly assess formal writing, whereas the weekly one-page assignments afford students the opportunity to develop their writing skills. Feedback, in the form of a marking schedule, is given to each student. This includes an overall grade (A, B, C, or D), written comments and ratings, using Likert scales from 1 (poor) to 5 (excellent), across a range of criteria. Completing the assignments and preparing for tutorials during the year requires students to manage their priorities. The cases also require some research, often internet-based, as the cases selected

are (where possible) based on existing organisations. Further, the cases should develop problem-solving, critical thinking, and conceptual thinking skills.

Tutorials are designed to build different generic skills than the one-page assignments. Tutors act as facilitators and evaluators in tutorials, rather than as teachers. Each week a team of students present one of the cases. Prior to the presentation, the presenters hand out a one-page summary of their presentation. The presenters then leave the room so that the remaining students can freely discuss the case and the presenters' analysis and solution. After 15-20 minutes, the presenters re-enter the room and begin their presentation. At the conclusion of the presentation, the students are expected to ask questions of the presenters. Tutorials provide plenty of opportunity for students to develop their oral communication and team work skills, as well as their analytical thinking skills (e.g., analysing the presentation).

The presentations are designed to develop a range of generic skills, particularly a professional attitude. There is a strict time limit for presentations of 15-20 minutes. Students are advised to practice their presentation or risk a grade penalty. Also, students are advised to share the presentation duties equally or risk a grade penalty. Tutors use a watch and grading sheet to monitor these aspects of the presentations. A data projector and computer with Microsoft PowerPoint are available to students, and they are graded on their use of visual aids. Of course, students are also graded on their analysis and recommendations, as well as their ability to defend their recommendations during question time. While students only have one

presentation in the course, a comprehensive grading sheet (similar to the one for the one-page assignments) is given to students, so that they can learn from the experience.

Three or four times during the year there is a tutorial “exercise” instead of the usual case presentation, in order to provide a change from weekly case studies. These exercises involve oral communication and team work in performing tasks such as preparing a balanced scorecard or an activity based costing report, or carrying out some target costing, or “manufacturing a product” out of children’s building bricks with differing compensation schemes (Drake et al., 2001). Also, these exercises require students to apply their subject knowledge to a specific situation (much like a case study), which helps students to develop their problem-solving and critical thinking skills.

## **Method**

### **Research question**

In order to evaluate the successfulness of the tutorial changes in achieving the goal of development of generic skills alongside technical skills, the following research question is asked:

What generic skills do present students and recent graduates think that AFIS 322 tutorials have provided them with that will be/are useful in their first accounting job?

### **The questionnaire**

A questionnaire (see appendix 1) was developed based on prior studies, in particular, Arquero Montaña et al. (2001), Hassall et al. (1998), Ballantine and

McCourt Larres (2004), De Lange et al. (2006), Baril et al. (1998), and Sawyer et al. (2000). One side of the questionnaire asked students for demographic information: gender, age, year of taking the course, graduation dates, country of secondary schooling, work experience, and current employment. The other side of the questionnaire assessed the development of generic skills classified into six categories: communication skills, team work, problem-solving/critical thinking, conceptual thinking, time management and research.

The questionnaire listed 25 skills with two Likert scales beside each skill. On the first scale, the students were asked to rate their development of that skill through the AFIS322 tutorials, on a scale from 1 (did not develop), through 3 (developed somewhat), to 5 (did develop). On the second scale, the students were asked to assess the usefulness of that skill to their career, on a scale from 1 (not useful), through 3 (somewhat useful), to 5 (useful).

The questionnaire was pilot tested with two AFIS322 tutors who had previously taken AFIS322 and then administered to this year's AFIS322 class during the second to last lecture of the year. Of the class roll of 126 students, approximately 80 students were present; 75 filled in the questionnaire, but one was unusable because the respondent only filled in demographic information. That is, there was a usable response rate of 60% of the total enrolment for the course.

The graduates' version of the questionnaire<sup>2</sup> was mailed to graduates of 2005, 2006 and 2007 who had included AFIS322 in their degree, 116 graduates in total. Although addresses were obtained from student records, it is doubtful whether many of them were current: 16 letters were returned as the graduate was no longer at that address, and even with a follow-up mailing, only 21 usable responses were received (a response rate of 18%; 4 other responses were received but they were incomplete and not usable).

In order to complement and compare with the perceptions of the students, the two current tutors of AFIS322 were asked to give their views on how well the students in their tutorials developed each of the skills listed in the questionnaire, specifically whether they saw a development in each of the skills, whether the students improved in some of them over the year and what level of competence they reached by the end of the year.

## **Results**

### **Demographic information about survey respondents**

The majority of the respondents (79%) were undergraduates. The gender split was almost equal (51% female; this is a very similar percentage to the gender split in the whole class, which was 53% female for the last two years). Most of the respondents were under 30 years old (76% under 25, 18%

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<sup>2</sup> For the questionnaires mailed to graduates, the usefulness column was phrased in the past tense thus:

For each of the following skills, circle the number that best describes its usefulness to your career:

- 1: "This skill has not been useful in my work so far"
- 3: "This skill has been somewhat useful in my work so far"
- 5: "This skill has been useful in my work so far"



between 25 and 29), with only a handful 30 or older (2 respondents were between 30 and 34, 3 were 35-39 and one was 41).

Sixty percent of the respondents attended secondary school in New Zealand, 27% in China, 4% in Malaysia, 2% in South Korea and 5% in other countries. Forty-three percent of the respondents worked before starting their degree, half of them fulltime and a quarter in an accounting job. Of all the respondents, 21% were currently working as an accountant.

### **Development and usefulness of generic skills**

Means and standard deviations were calculated for each skill and then ranked from highest (developed/useful) to lowest (not developed/not useful) (see tables 2 and 3). Visual inspection of the tables shows that the eight problem-solving/critical thinking skills ranked in the top ten most developed and were prominent in the highest ranked for usefulness. This perception was supported by the tutors:

[The first seven skills – Identify key issues in a problem situation, See how details fit into overall situation; Apply knowledge to a problem; Classify, organise and evaluate information; Determine feasible solutions to a problem; Be objective and balanced in analysis; Determine the best solution for the particular situation – were] clearly developed. ... In general, students got better and better in identifying key issues. ... a large proportion of students struggled to put everything together until the end of the 2nd semester. ... the majority of the students improved [these skills] over the year. (Tutor 1)

[These skills were] most relevant in the weekly assignments. Students at the start of year were awful at [identifying key issues], and often missed the boat entirely. This was something I specifically worked on with the class. ... Students often made errors

[in seeing how details fit into the overall situation], but again substantial improvements were made. ... . Students often failed to see the link between lectures and the cases and either copied out lecture slides or ignored them completely. Knowledge outside the course (i.e., human behaviour / general business knowledge) was often ignored. This also improved as the year went on. ... Students often only offered one solution. This was something I worked very hard [on] and large improvements were made. At year-end nearly all students offered reasoned alternatives. ... [and] realized the importance of arguing diligently both ways before deciding on a conclusion. (Tutor 2)

[insert tables 2 and 3 about here]

The only skill in this category that the tutors did not see develop was “Think about innovative/creative/different solutions when necessary”:

It happens occasionally. It does not really “develop” over the year. It depends on each case study. When creative solutions come, they just come. (Tutor 1)

This was very rare to see ... On some occasions I received well argued unique answers, but I wouldn't say it was applicable for the majority. (Tutor 2)

This skill had a significantly lower mean (3.63 \* <sup>3</sup>) than the next highest in this category ("See how details fit into overall situation", mean 3.81).

Also notable from tables 2 and 3 is that library and internet research skills were in the bottom 5 for both development and usefulness, with the mean for using library resources being significantly lower (\*\*) than the mean for using internet resources. Tutors noted that:

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<sup>3</sup> For all results: \*\*\*  $p \leq 0.001$   
\*\*  $p \leq 0.010$   
\*  $p \leq 0.100$

... as long as the case study asks students to do additional research, students will normally carry out some research. (Tutor 1)

[Library research] was only relevant where required for specific tutorials. Those few that need[ed] to research generally did well, only a rare few [were] lazy. [Internet research] was common to get background on many [tutorial cases]. Generally well done. (Tutor 2)

Note that all means in tables 2 and 3, except for using library resources, are above the middle point on the 1 to 5 scale. That is, the respondents perceived that they had developed the skills more than “somewhat” and that the skills were useful.

Overall means for each category were calculated and ranked (see table 4). This overall ranking shows that the problem-solving/critical thinking category was the most developed (statistically different from team work \*\*\*). The means of the next four categories (team work, time management, communication skills and conceptual thinking) were not statistically different. Development of research skills was lowest and significantly different from conceptual thinking (\*\*). In considering usefulness of each category, time management, problem solving, and team work were ranked equally useful, with communication skills being marginally lower (\*). Conceptual thinking and research were significantly lower than communication skills (\*\*\*). That is highly ranked categories for development were also highly ranked for usefulness with problem solving high and research low.

[insert table 4 about here]

Tutors also made comments on development of the middle ranked categories.

In relation to team work they noted that:

Working effectively in teams ... developed quite well. [The] two presenters co-operated with each other quite well during the presentation and question-answering. ... People do better after they see others' presentations. . It developed over the year. Competence at the end of the year was very good. (Tutor 1)

Students generally co-operated very well; it was fairly common to see groups bouncing ideas off each other and adding to each other's answers. (Tutor 2)

However, tutors' views on various aspects of team work did not always agree with each other or with the students' views.

Recognising other people's point of view ... occurred during class question time, [in the] pre-presentation discussions and during class exercises. As the year went on students were more receptive to different ideas/answers. [There was only moderate development] (Tutor 2)

Recognising other people's point of view ... did not really develop over the year. People are normally quite polite. Even though answers from presenters are rubbish, people will still "accept" those because there is no point [in] talk[ing] about or discuss[ing] some points again and again. It will annoy other students. (Tutor 1)

Despite the reservations of the tutors, students ranked this skill reasonably high (mean 3.84).

Tutors differed in their views on students' development of the ability to negotiate with others:

[I] can't tell [if students developed Negotiation skills]. [I] don't think it is relevant in 322. However, students do (presenters vs others) reach some common grounds during the question-answering stage. (Tutor 1)

Negotiation skills [were] most evident when we as a class debated specific issues. I tried to do this regularly as I felt it was most useful to the students. This was most evident when students were divided, and we tried as a class to decide on the more correct answer. This improved well, as at the start students were reluctant to participate. As was often the case, some students rarely participated and others almost always did. [Competence at the end of the course was moderate.] (Tutor 2).

Student ratings for this skill were in the middle range (mean 3.51, lower than the mean for Recognising other people's point of view \*).

The tutors felt that recognising and accepting leadership

... [is] irrelevant to 322 presentations and one-page summaries. People have incentives to do an equal share of the presentation ... because students know if one becomes the dominant leader during the presentation, the other will be marked down for not doing enough work. Hence, people share the workload during the presentation. And it is impossible for me to investigate the preparation process (leadership can be involved at that stage) of the presentation. (Tutor 1)

I don't view this as terribly applicable. Groups were only large enough for a leader in class exercises. ... There were a few people I would describe as leaders in the class. This was likely wholly independent of the [tutorials] though. (Tutor 2)

The mean for students' perception of development of this skill in tutorials was one of the lowest (3.36), and significantly lower than Team work 3 (\*\*).

Tutors did not feel able to assess development of time management skills. One tutor said: "I would assume this was a skill taught, due to the sometimes onerous amount of work for 322!" and the other tutor considered he was "not in a position to investigate the issue". Students considered they developed the ability to organise their workloads in face of conflicting demands (mean

3.63) and to assign priorities (3.54) more so than the ability to organise their workload to meet deadlines (3.41). However, there was no statistical difference between these means.

Communication skills were all assessed very similarly by students, in the middle of the range of rankings (from mean of 3.79 down to 3.50 for six of them); only displaying a professional attitude (3.22) was significantly lower (\*).

#### Making oral presentations:

This skill was obviously covered by the presentation. Students didn't get an opportunity to improve as they only did one presentation; I would not say that students later in the year were better than earlier. Generally students had not practiced enough. Many also spoke too quickly (nervous). ... Several students used very little or no eye contact. Timing, a likely symptom of a lack of practice, also plagued the presentations and cost many students good marks. (Tutor 2).

Students generally possessed better skills by watching other students' presentations each week. The oral presentation skill tends to get better towards the end of the year. (Tutor 1)

#### Communicate in writing:

For some students, it improved over the year. (Tutor 1)

In all honesty I tried not to mark for poor English too much as I felt it penalized the international students. I did however have no choice but to penalize students that I couldn't understand. Often I could sense what students (both international and domestic) meant, but it was not clear from reading their work. I think this is common in every subject. I do not believe English has been well taught [in] prior education in NZ ... I don't really think students improved much here [as] the problems were too deep seated to improve on. (Tutor 2)

As lecturers on the course, the authors feel that this judgement is overly negative: observation of writing style from the mid-course test compared with the final exam displays considerable improvement.

#### Using visual aids in presentations:

It developed quite well. Most of visual aids in presentations look good to me. (Tutor 1)

All students used PowerPoint, and only a few also utilized the whiteboard to assist. Most students had enough skills to use PowerPoint. Problems arose with the content. Essentially a fair proportion of students wrote too much on the slides meaning they were reading from them, and generally the text was too small for the class to read. Also many students copied charts or diagrams on to their slides which were too small for the class to see. Presentations were generally simple and few utilized the fancy feature of PowerPoint, [e.g.] words flying in. This was fine, as they were doing professional presentations. Again, students didn't get an opportunity to improve, but probably students later in the year were better than earlier. (Tutor 2)

#### Defending one's own point of view:

[I] can't tell about individuals. As a whole, [this skill] developed quite well. ... Students got better in terms of saying some stuff ([although it could] be rubbish) in order to defend their views. [End of year competence was] very good. (Tutor 1)

This occurred during class question time, and in some class exercises. Unfortunately, students generally didn't answer class questions well, and it was common not to be able to defend solutions effectively. Hostility was common earlier on as some students viewed questioning as an attack on their work efforts. However this improved as the year went on. (Tutor 2)

#### Listening to others:

Nahhhhh. People don't really listen carefully [to] others' presentations. I reckon the reality is that students sit there politely without listening and thinking. (Tutor 1)

This occurred during class question time, [in] pre-presentation discussions and during class exercises. In all honesty I have doubt over whether many students actually discussed pre-presentation as [the] number[s] were too large for me to police it effectively. I would not be surprised to find out many student were not paying attention to the presentations. Some talking (which I came down hard on) occurred every few weeks during presentations. Some students would have improved at listening to others' ideas. (Tutor 2)

Interestingly, students thought that they had developed this skill as well as the other communication skills.

Write clearly and concisely:

It depends on the students really. Some students got Cs and Bs initially but improved a lot later on. Some students just wrote rubbish all the time or gave up writing. But I reckon this skill did improve for over 50% of the students. (Tutor 1)

This skill was obviously covered by the weekly assignments. I did penalize students when their writing was confusing or vague. Confusion was fairly common. Students also often waffled on, or were too concise and failed to discuss the issues. In general students improved but not much as much I would have liked. [Competence at the end of the year was moderate.] (Tutor 2)

Displaying a professional attitude had a lower mean than other communication skills and had a wider spread (std. dev. 1.15):

Some presentations went really well but others went not so well. Some presenters are not happy when people ask them questions [which was] not professional. ... But in general, the discussion was carried out in a professional manner. [However] no general trend [in development of this competency could] be found. (Tutor 1)



This occurred throughout the tutorials. This did improve [to quite a high level] as students became more open to other ideas. Students generally took the tutorials seriously. (Tutor 2)

This skill also varies in relation to working experience of respondents (covered later).

Conceptual thinking development was rated relatively low by respondents, with no statistical difference between recognising and questioning assumptions. Tutors thought these skills were developed by a few or not at all:

Recognising assumptions ... developed. However, not all case studies in 322 need assumptions. But some students did recognise assumptions in their presentations and one-page summaries. (Tutor 1)

Students ... often assume that if a company is doing X, and is profitable, then X is the correct method. Student also seemed to assume that if a high manager thinks X is correct, then X should be done. This became less common as the year went on. (Tutor 2)

Question assumptions? ... It has never happened. (Tutor 1)

### **Comparison of development and usefulness of skills**

The ratings by respondents for development and those for usefulness were compared by correlation analysis. All correlations were significant, except for “display a professional attitude” (see tables 5 and 6). That is if respondents perceived that they had not developed the skill they also thought that it was not useful for their career, and vice-versa.

[insert tables 5 and 6 about here]

*t*-tests of differences between development and usefulness, by skill and by category, show that respondents perceive the usefulness of the skills as being higher than their development of the skill in the course (see tables 7 and 8 for ranking by significance of differences). The most significant difference was for displaying a professional attitude (\*\*\*). Further breakdown revealed that those with prior work experience perceived the usefulness of displaying a professional attitude more highly (\*). Also, New Zealand educated respondents perceived the usefulness of displaying a professional attitude more highly than Asian educated (\*).

[insert tables 7 and 8 about here]

### **Differences between demographic groups**

The above results compare development with usefulness. There were other significant differences between different demographic groups of respondents, according to their gender, prior work experience, whether they were current students or graduates, and the country where they had the majority of their secondary schooling. There were too few respondents in some groups (by age, level of degree, and place of work) to carry out statistical analysis.

Tests of differences between means of females (n=46) and males (n=45) for each skill and by category revealed that the two groups had similar perceptions of development and usefulness of generic skills. The only significant differences between skills were for using visual aids (\*), identifying key issues in a problem situation (\*), using internet resources (\*\*), and for the

overall category of Research (\*). In each of these cases females perceived that they developed these skills to a greater extent than males.

Respondents with (n=38) and without (n=51) work experience before studying had similar perceptions, the only significant differences being for development of team work skills ("recognise and accept leadership" \*, "negotiate with others" \* and the overall category of Team work \*). Respondents with work experience perceived that they did not develop team work skills as much as those without work experience. Possibly respondents with relevant work experience had already developed team work skills in their jobs. Respondents with work experience also perceived the usefulness of displaying a professional attitude to be more important for their careers (\*) probably because of their exposure to a workplace.

Although work experience mostly did not discriminate between respondents, *relevant* work experience did: the perceptions of accountants (n=19) were quite different to those of non-accountants (n=72) for each skill (see table 9) and by category. Accountants perceived that they developed the ability to identify key issues in a problem situation, to question assumptions, to write clearly and concisely, to make oral presentations and to see how details fit into overall situations more so than non-accountants. Also, accountants perceived that the ability to display a professional attitude, to recognise other people's point of view, to display all aspects of time management, to classify, organise and evaluate information, to write clearly and concisely, to communicate in writing and to recognise assumptions were more useful for their career than non-accountants.

[insert table 9 about here]

While there are significant differences for a number of individual skills, there are fewer significant differences between means of overall categories. Accountants perceived that they developed conceptual thinking more so than non-accountants (\*). Also, accountants perceived that communication skills, team work, and time management were more useful for their career than non-accountants (all \*). Undoubtedly, these significant differences reflect the work experience of accountants and highlight the importance of generic skills once in an accounting job.

The perceptions of students (n=74) were compared to those of graduates (n=24) for each skill (see table 10) and by category. Graduates believed that they had developed the ability to use library resources, to make oral presentations, to identify key issues, to write clearly and concisely, to listen to others, and to use internet resources to a greater extent than students. Interestingly, students believed that thinking about innovative solutions, recognising and questioning assumptions, determining feasible solutions to a problem, using visual aids in presentations, and using library resources would be more useful to their career than graduates. Perhaps, the differences were due to their level of exposure to the workplace; that is, graduates in their first few years out of university have not had to use these skills. Comparing whole categories revealed few significant differences: research and communication skills were perceived to be developed more (\*) by graduates than students. Also, students perceived conceptual thinking to be more useful (\*) for their career than graduates.

[insert table 10 about here]

Respondents were divided into groups according to the country/region where they undertook their secondary school education (see tables 11 and 12). Respondents who were schooled in China (n=25) and Asia (including China: n=34) developed team work as a whole (\*\*), particularly the ability to negotiate with others and recognise and accept leadership, to a greater extent than those schooled in New Zealand (n=54). Perhaps, Asian secondary schooling has less emphasis on team work than New Zealand, so New Zealand students do not think it is developed particularly in one course as they have been using team work already. Also, New Zealand respondents perceived time management as a whole (\*\*) and all aspects of it, determining feasible and optimal solutions, recognising assumptions, and displaying a professional attitude, to be more useful to their career than Asian respondents.

[insert tables 11 and 12 about here]

## **Discussion**

One weakness of the survey method used is that it asks for students' self-assessment of the development of each skill. As the questionnaires were anonymous, it was not possible to compare each student's perception with, for example, their performance in tutorial assessments and their application of the skills to examination questions. However, the study redresses this weakness to some extent by also obtaining the qualitative assessment of the tutors.

There are several interesting contrasts between student perceptions and tutors' evaluations. Tutors disagreed with students about whether or not students learn to be innovative or creative in problem solving. Perhaps there were different perceptions of what innovative/creative means, with tutors thinking that it meant "new, unusual and different from other students' and the model answer" whereas students may have thought it merely meant well thought out. Tutors differed with each other and with students over whether students developed the ability to listen to and see others' points of view. Anecdotal evidence given to one of the authors indicates that students may not bring up points of disagreement because they fear that if they give another student "a hard time" during their presentation, then they will have a hard time when it is their turn. Tutors differed over whether students negotiate when there is disagreement, which may reflect different tutorial composition and different tutor engagement. The tutors' doubts about the lower student ratings for the development of conceptual thinking reflect the students' preference for one-size-fits-all or "silver bullet" solutions; for example, often the balanced scorecard or activity based costing is suggested as a solution whether it is appropriate or not.

As found by Ballantine and McCourt Larres (2004), development of research skills were low in this study, with use of library resources being lower than use of internet resources. Perhaps this low ranking for using library resources reflects the ease with which these resources can be accessed from the students' computer, obviating the need to physically visit the library: many journal articles are now available in databases or through internet resources such as Google Scholar, which may have been considered to be internet

rather than library resources. Graduates rated the usefulness of using library resources lower than students, indicating that they have not seen the need for using library resources since they have been working.

Respondents consider the usefulness of the various skills in their working life to be higher than their perceived development of those skills in the AFIS322 tutorials. The most significant difference was for displaying a professional attitude, which was perceived as more useful by those with prior work experience, those with high school education primarily in New Zealand, and those working as accountants. Practising accountants also considered communication skills, team work and time management to be more useful for their careers, and considered they had developed conceptual thinking and various other individual skills more so than those not yet employed as accountants. As students' perceptions are influenced by what we say (or don't say), tutors and lecturers could emphasise more the importance of the development of generic skills for their careers and how the tutorials and assessments can contribute to this development.

Resourcing of tutorials may lead to several deficiencies in achieving the skill development aims of the course. Tutors felt that tutorials do not provide the opportunity for leadership. However, this could only be developed fully by increasing the number of class exercises, which would compromise the learning in discussion and presentation tutorials. Development of communication skills depends on frequent and detailed feedback, but tutors have their own time constraints and may feel the remuneration is too low to spend too much time on feedback. Also, students could develop presentation

skills much more if they had more presentation opportunities. However, time, monetary and staffing constraints mean they are only able to present once.

## **Conclusions**

This paper studies the perceived effectiveness of an attempt to address the calls for incorporating the development of generic skills in an accounting curriculum (e.g., Rebele et al., 1998; Fallows and Steven, 2000), which Adler and Milne (1997b) claimed was missing in accounting education in New Zealand. It takes a step in answering Apostolou et al.'s (2001) call for research on how pedagogical innovations affect student learning, in this case, the learning of generic skills rather than technical content.

The research comprised a survey of current and past students' perceptions of their learning of generic skills in the tutorials, as well as the views of the current tutors. Both students and tutors felt that the format of the tutorials and assessment enabled the development of many generic skills, primarily problem solving, but also to a high degree team work, time management, communication and conceptual thinking. Research skills were the least developed. The same skills were perceived to be useful in an accounting career.

There are several ways in which this study could be extended in future research. The development of generic skills could be examined over an entire degree programme (Watson et al., 2007). Questionnaire responses could be named so that responses could be matched with test and examination grades and with tutorial assessments. Alternatively, respondents



could be interviewed and observed to gain a more in depth understand of how they approach learning and development of skills (e.g., how they work in groups, how they respond to questions and differences of opinion, etc.).

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# Skills developed in AFIS 322 tutorials

For each of the following skills, circle the number that best describes your experience

- 1: "I did not develop this skill in 322 tutes"
- 3: "I have developed this skill somewhat in 322 tutes"
- 5: "I have developed this skill in 322 tutes"

For each of the following skills, circle the number that best describes its usefulness to your future career:

- 1: "This skill will not be useful in my future career"
- 3: "This skill will be somewhat useful in my future career"
- 5: "This skill will be useful in my future career"

## Development of skill

## Usefulness to my career

### Communication skills

Did not develop      Developed somewhat      Did develop

Not useful      Somewhat useful      Useful

Write clearly and concisely .....	1	2	3	4	5	.....	1	2	3	4	5
Communicate in writing.....	1	2	3	4	5	.....	1	2	3	4	5
Make oral presentations.....	1	2	3	4	5	.....	1	2	3	4	5
Use visual aids in presentations .....	1	2	3	4	5	.....	1	2	3	4	5
Listen to others .....	1	2	3	4	5	.....	1	2	3	4	5
Defend my own point of view .....	1	2	3	4	5	.....	1	2	3	4	5
Display a professional attitude .....	1	2	3	4	5	.....	1	2	3	4	5

### Team work

Recognise other people's point of view .....	1	2	3	4	5	.....	1	2	3	4	5
Recognise and accept leadership.....	1	2	3	4	5	.....	1	2	3	4	5
Negotiate with others .....	1	2	3	4	5	.....	1	2	3	4	5

### Problem solving/Critical thinking

Identify key issues in a problem situation .....	1	2	3	4	5	.....	1	2	3	4	5
See how details fit into overall situation.....	1	2	3	4	5	.....	1	2	3	4	5
Apply knowledge to a problem.....	1	2	3	4	5	.....	1	2	3	4	5
Classify, organise and evaluate information.....	1	2	3	4	5	.....	1	2	3	4	5
Determine feasible solutions to a problem.....	1	2	3	4	5	.....	1	2	3	4	5
Be objective and balanced in analysis .....	1	2	3	4	5	.....	1	2	3	4	5
Determine the best solution for the particular situation.....	1	2	3	4	5	.....	1	2	3	4	5
Think about innovative/creative/different solutions when necessary.....	1	2	3	4	5	.....	1	2	3	4	5

### Conceptual thinking

Recognise assumptions.....	1	2	3	4	5	.....	1	2	3	4	5
Question assumptions .....	1	2	3	4	5	.....	1	2	3	4	5

### Time management

Organise my workload to meet deadlines.....	1	2	3	4	5	.....	1	2	3	4	5
Organise my workload in face of conflicting demands .....	1	2	3	4	5	.....	1	2	3	4	5
Assign priorities.....	1	2	3	4	5	.....	1	2	3	4	5

### Research

Use library resources .....	1	2	3	4	5	.....	1	2	3	4	5
Use internet resources .....	1	2	3	4	5	.....	1	2	3	4	5

## Tables

	One-page assignments	Tutorial participation	Presentation	Exercises
Communication skills	Written	Oral	Oral & Written	Oral
Team work		Discussing	Defending	Discussing
Problem solving/Critical thinking	Reasoning	Analysing	Reasoning	Reasoning
Conceptual thinking	Reasoning	Analysing	Reasoning	Reasoning
Time management	Long-term		Short-term	
Research	Enquiring		Enquiring	

**Table 1: Tutorial assessment**

Skill	Mean	s. d.
Apply knowledge to a problem	4.05	0.77
Identify key issues in a problem situation	4.04	0.74
Be objective and balanced in analysis	3.88	0.91
Classify, organise and evaluate information	3.86	0.84
Determine the best solution for the particular situation	3.85	0.79
Recognise other people' s point of view	3.84	0.87
See how details fit into overall situation	3.81	0.77
Determine feasible solutions to a problem	3.81	0.83
Make oral presentations	3.79	0.99
Think about innovative/creative/different solutions when necessary	3.63	0.97
Organise own workload in face of conflicting demands	3.63	1.13
Communicate in writing	3.61	1.04
Use visual aids in presentations	3.58	1.08
Defend one's own point of view	3.54	1.10
Assign priorities	3.54	1.09
Listen to others	3.52	1.05
Negotiate with others	3.51	0.96
Write clearly and concisely	3.50	1.05
Question assumptions	3.50	0.93
Organise own workload to meet deadlines	3.41	1.12
Use internet resources	3.41	1.18
Recognise assumptions	3.41	0.91
Recognise and accept leadership	3.36	1.05
Display a professional attitude	3.22	1.15
Use library resources	2.90	1.28

**Table 2: Means for development of each skill**

<b>Skill</b>	<b>Mean</b>	<b>s. d.</b>
Identify key issues in a problem situation	4.29	0.86
Apply knowledge to a problem	4.29	0.88
Determine feasible solutions to a problem	4.25	0.86
Communicate in writing	4.24	0.97
Assign priorities	4.23	0.95
Classify, organise and evaluate information	4.21	0.90
Organise own workload in face of conflicting demands	4.19	0.94
Display a professional attitude	4.19	0.99
Determine the best solution for the particular situation	4.18	0.88
Recognise other people's point of view	4.17	0.82
Negotiate with others	4.14	0.91
Write clearly and concisely	4.13	0.97
Organise own workload to meet deadlines	4.13	1.02
Be objective and balanced in analysis	4.10	0.99
Listen to others	4.07	0.93
Recognise and accept leadership	4.06	0.95
Think about innovative/creative/different solutions when necessary	4.05	0.93
See how details fit into overall situation	4.03	0.90
Make oral presentations	4.00	1.03
Defend one's own point of view	3.98	0.94
Use internet resources	3.88	1.07
Use visual aids in presentations	3.71	0.99
Question assumptions	3.70	0.95
Recognise assumptions	3.63	1.02
Use library resources	3.18	1.16

**Table 3: Means for usefulness of each skill**

<b>Developed</b>		<b>Useful</b>	
<b>Category</b>	<b>Mean</b>	<b>Category</b>	<b>Mean</b>
Problem solving	3.86	Time management	4.20
Team work	3.56	Problem solving	4.17
Time management	3.54	Team work	4.13
Communication skills	3.53	Communication skills	4.04
Conceptual thinking	3.46	Conceptual thinking	3.66
Research	3.15	Research	3.52

**Table 4: Overall means for each category**

<b>Skill</b>	<b><i>r</i></b>	
Write clearly and concisely	0.173	*
Communicate in writing	0.254	*
Make oral presentations	0.523	***
Use visual aids in presentations	0.472	***
Listen to others	0.428	***
Defend one's own point of view	0.326	**
Display a professional attitude	0.128	
Recognise other people's point of view	0.308	**
Recognise and accept leadership	0.283	**
Negotiate with others	0.258	*
Identify key issues in a problem situation	0.403	***
See how details fit into overall situation	0.526	***
Apply knowledge to a problem	0.373	***
Classify, organise and evaluate information	0.414	***
Determine feasible solutions to a problem	0.435	***
Be objective and balanced in analysis	0.350	**
Determine the best solution for the particular situation	0.317	**
Think about innovative/creative/different solutions when necessary	0.363	***
Recognise assumptions	0.448	***
Question assumptions	0.198	*
Organise own workload to meet deadlines	0.354	**
Organise own workload in face of conflicting demands	0.281	**
Assign priorities	0.336	**
Use library resources	0.485	***
Use internet resources	0.356	***

**Table 5: Correlations between development and usefulness of each skill**

<b>Category</b>	<b><i>r</i></b>	
Problem solving	0.460	***
Research	0.438	***
Time management	0.354	**
Communication skills	0.347	**
Conceptual thinking	0.347	**
Team work	0.315	**

**Table 6: Correlations between development and usefulness by category**

<b>Skill</b>	<b>t</b>	
Display a professional attitude	-6.709	***
Organise own workload to meet deadlines	-5.710	***
Recognise and accept leadership	-5.595	***
Assign priorities	-5.541	***
Negotiate with others	-5.234	***
Listen to others	-5.054	***
Communicate in writing	-5.001	***
Write clearly and concisely	-4.657	***
Determine feasible solutions to a problem	-4.518	***
Organise own workload in face of conflicting demands	-4.366	***
Defend one's own point of view	-3.770	***
Classify, organise and evaluate information	-3.692	***
Use internet resources	-3.505	***
Think about innovative/creative/different solutions when necessary	-3.459	***
Recognise other people's point of view	-3.278	***
Determine the best solution for the particular situation	-2.848	**
Identify key issues in a problem situation	-2.640	**
Use library resources	-2.358	*
See how details fit into overall situation	-2.342	*
Apply knowledge to a problem	-2.318	*
Recognise assumptions	-1.904	*
Make oral presentations	-1.825	*
Be objective and balanced in analysis	-1.752	*
Question assumptions	-1.532	
Use visual aids in presentations	-1.366	

**Table 7: Differences between means of development and usefulness for each skill**

<b>Category</b>	<b>t</b>	
Team work	-5.774	***
Time management	-5.667	***
Communication skills	-5.354	***
Problem solving	-3.849	***
Research	-3.313	**
Conceptual thinking	-1.831	*

**Table 8: Differences between means of development and usefulness by category**

<b>Skill</b>	<b>t</b>	
<b>Developed</b>		
Identify key issues in a problem situation	2.018	*
Question assumptions	1.964	*
Write clearly and concisely	1.826	*
Make oral presentations	1.779	*
See how details fit into overall situation	1.724	*
<b>Useful</b>		
Display a professional attitude	3.276	**
Organise own workload to meet deadlines	2.549	*
Recognise other people's point of view	2.420	*
Assign priorities	2.290	*
Classify, organise and evaluate information	2.238	*
Write clearly and concisely	2.196	*
Organise own workload in face of conflicting demands	2.183	*
Communicate in writing	1.943	*
Recognise assumptions	1.790	*

**Table 9: Significant differences between means of accountants and non-accountants for each skill**

<b>Skill</b>	<b>t</b>	
<b>Developed</b>		
Use library resources	-2.389	*
Make oral presentations	-2.189	*
Identify key issues in a problem situation	-2.185	*
Write clearly and concisely	-1.834	*
Listen to others	-1.714	*
Use internet resources	-1.685	*
<b>Useful</b>		
Think about innovative/creative/different solutions when necessary	2.016	*
Recognise assumptions	1.919	*
Question assumptions	1.913	*
Determine feasible solutions to a problem	1.906	*
Use visual aids in presentations	1.782	*
Use library resources	1.686	*

**Table 10: Significant differences between means of students and graduates for each skill**

<b>Skill</b>	<b>t</b>	
<b>Developed</b>		
Negotiate with others	-3.875	***
Recognise and accept leadership	-2.501	*
<b>Useful</b>		
Assign priorities	3.158	**
Determine feasible solutions to a problem	2.697	**
Determine the best solution for the particular situation	2.526	*
Organise own workload in face of conflicting demands	2.417	*
Organise own workload to meet deadlines	2.247	*

**Table 11: Significant differences between means of respondents schooled in New Zealand and China for each skill**

<b>Skill</b>	<b>t</b>	
<b>Developed</b>		
Negotiate with others	-3.168	**
Recognise and accept leadership	-2.384	*
<b>Useful</b>		
Assign priorities	2.936	**
Organise own workload in face of conflicting demands	2.437	*
Determine feasible solutions to a problem	2.262	*
Organise own workload to meet deadlines	2.250	*
Determine the best solution for the particular situation	1.879	*
Recognise assumptions	1.747	*
Display a professional attitude	1.688	*

**Table 12: Significant differences between means of respondents schooled in New Zealand and Asia for each skill**