



# Learning in Today's Academic Environment

A research project 2012 to 2016  
– preliminary findings

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## Executive Summary

The aim of this project is to enable tertiary-level educators to better understand their students; their inclinations and their learning environments. Students today face different and more intrusive pressures from social and technological sources, as compared to experiences from previous generations. The aim of the project is to gather evidence that will inform teachers about ways they can change their focus from creating a good teaching environment (teacher-focused), to enabling a positive learning environment (student-focused).

This report presents preliminary findings from a longitudinal project started in early 2012 and is planned to end in 2016. It gathers information about two whole cohorts of accounting students as they progress through their Bachelor of Commerce degrees. Questionnaires are used in each semester and the same sets of students are followed from their first to third years of studies. Some sets of questions remain constant throughout, plus the project also addresses some specific themes each semester. The project overall investigates a number of influences on academic performance (measured through course grades) and student experiences. Statistical analysis is used in places to extract information regarding the effectiveness of a variety of classroom activities. The data gathered provide directions for further research investigations beyond those described in this report.

A number of findings have already been found, some surprising and some predictable. Key findings include:

- i. attendance at weekly tutorial sessions has an effect; the less frequent the attendance the lower the grade;
- ii. the use of unstructured business cases is often cited as enhancing a deep approach to learning, but in the context of this project, this claim was not supported;
- iii. the sample of students for this focus area showed an increase in surface learning styles over the semester; and
- iv. for students in part-time paid employment, there is little effect on grades, but the perceived level of interference is related to grades.

Interpreting the findings requires understanding the context within which the project is situated. This is also a significant conclusion, to recognise that teaching practices that are highly effective in one situation may not be so elsewhere.

## Introduction

This project will be of interest to anyone concerned with how students do (and do not) engage with an academic environment. Today's students have grown up in a world with technological capabilities vastly different from that of their teachers. Teaching practices respond to students' needs and abilities with variable success. The premise of this project is that, in order to create a positive learning environment in which students can thrive and succeed, teachers need to gain a better understanding of how they learn. The research team is trying to determine what has positive and negative impacts on students' educational experiences, from both inside and outside a formal university setting. The project as a whole aims to explore and question how students engage with their teachers, and their entire academic environment.

The project was designed in 2011, resulting from a number of different sources. The Otago Business School has, in common with other areas within the University, longstanding issues with student attendance. This is a concern for teaching departments where regular classroom activities are designed to enhance student learning.

Motivation may be a partial explanation, in that students in the Department of Accountancy and Finance have often chosen to study accounting in the hopes of secure employment soon after graduation; the majority of our students study accounting with a view to gaining professional membership and future employment as chartered accountants. Their studies lead directly to a job market, and attendance and interaction with classroom activities is firmly believed to help students to gain the necessary skills. Accountancy as a discipline is not alone in this, and other professions also have students who are firmly job-focused. This is different from other academic disciplines where students tend to pursue their degrees mainly because of interest in the subject. In other words, students in a profession-related discipline are arguably less inclined to study mainly because they really like it.

Related to this is the presence of some key papers that develop essential foundational knowledge for accounting studies, and which students only take because they are required. There are essential foundation topics that are taught at first and second years that cannot be avoided. It is a challenge to teachers to inspire and motivate students in these classes, and any teaching practices that will enhance student interest and success need to be implemented.

Potential themes for investigation arose from a number of sources. Some anecdotal and informal discussions raised some questions. For example, the university's book shop informed us that despite a new and different required textbook being introduced, the number of texts sold was less than half of the class enrolment. Staff in the advisory group for careers reinforce the impression that students are busy with non-academic activities to a much greater extent than in previous generations. Student debt levels are rising, which reinforces the impression that a greater number of students are seeking paid employment during their studies. International student support advisors voice frustration at low numbers of students seeking help when they are clearly struggling with English as a second language. And students themselves relate conflicting pressures to spend time studying and to engage in non-classroom activities. Many students play sport, some at representational level. Some have family responsibilities. Most students have some level of student debt and are concerned about the impact of this on future earnings.

As well as these informal sources of areas that concern students, there is a range of literature supporting teaching techniques such as active participation in classroom activities, motivation theory, the usefulness of group work and the impact of assignments (Baeten *et al*, 2010; Adler *et al*, 2004; Dallimore *et al*, 2010; Kyndt *et al*, 2011 and Rayburn & Rayburn, 1990). All of these influences combined to create the impetus for this project. The concern

is that our teaching practices may not be compatible with student needs for learning in a digital age. The standard university structure of large lectures with smaller tutorial discussion sessions remains unchanged, and is likely to continue in an environment of high student-to-staff ratios and limited budgets. The traditional assessment schedule based around textbook reading, homework assignments and examinations also remains. Students may not respond well to this approach anymore, and the challenge to educators is to work within the given environment in a more responsive manner that will lead to more positive outcomes.

## Project Design and Methodology

The project is based in the Department of Accountancy and Finance at the University of Otago. The three-year degree (Bachelor of Commerce) provides the academic requirements for accreditation with the professional accounting organisation of New Zealand. The first year of studies starts by introducing the relevance of accounting in the general business world from a user's perspective, and then moves into creating accounting reports from a preparer's point of view. Approximately half of the first-year students have studied this at high school, while the remaining half has never experienced this discipline before. At second year, students develop the preparers' skills to a higher level and also engage with the profession through learning about accounting standards (guidelines that direct how much of the accounting function of business is carried out). In the third and final year, students begin to apply their core knowledge to diverse situations and to develop a sense of critical analysis.

Information is gathered for this project using survey methodology, with clusters of questions examining different aspects of student experiences. For example, sets of questions investigate where students source information; the amount of time spent in preparation for class-related activities; study habits; leadership attributes; commitments to jobs, sports, family; abilities in English (if second language) and living arrangements. The information is based in students' self-perceptions. Course grades were used as indicator of academic success.

The project has received approval from the University Ethics Committee to track individuals over time. All information used is reported in summary form only, and students sign consent forms with each questionnaire completed.

Beginning in 2012 and planned to end in 2016, this study includes three cohorts of undergraduate accounting students across three years each. As this report is written, in December 2014, the first cohort of students is reaching the end of their undergraduate programme, and the findings to date relate to this first set of students only. The focus of any analysis this far has been static ("snapshot") pictures of different years. Future focus points will be longitudinal in nature, tracking students and cohorts of students over time. Investigations undertaken over the past two years include the impact on grades from: voluntary engagement (participation) in class activities, the use of unstructured business cases in deep and surface learning styles and the impact of life outside the classroom. In planning for 2015 is an investigation into international students' experiences. Still to be developed are longitudinal studies that track changes in cohorts of students as they progress through their degrees, relating to: study habits, voluntary engagement in class activities, leadership attributes, graduate attributes and goals and ambitions. The findings to date are described next, as listed in the Executive Summary.

## Results and Findings

*1 - Attendance at weekly tutorial sessions has an effect; the less frequent the attendance the lower the grade.*

This first theme explores the relationship between the voluntary engagement in class activities (participation) and course grades. This theme builds on the idea that today's students experience a *learning* environment that is very different from previous generations' *teaching* environments. Tertiary-level students in the 21<sup>st</sup> Century have grown up with instant access to almost unlimited information; managed largely through controls they impose in order to reduce information blow-out. This alters the way the process information; one clear difference is that students do not necessarily see the need to attend lectures. An empirical study was designed that examined an observation of the research team. Teachers inherently believe that students should be in class in order to learn what teachers want to teach them. The assumption is made that attendance leads to learning. Yet teachers see lecture rooms containing a fraction of the total class enrolment. Small-group tutorials may never reach maximum capacity. Is there an impact from students not coming to class?

Into expectancy theory (Vroom, 1964; Harrell *et al*, 1985) with respect to student motivation is used as an underlying framework. If students value an outcome, they will be motivated towards activities that they believe will lead to that outcome. A desirable outcome is defined in terms of grades; in accounting education, most of undergraduates will seek high grades to better enable their chances for a good job. The more highly motivated the student, the higher the level of participation and thus the higher the grades.

Thus, if students seek good grades, and if they believe that attendance will lead to those high grades, then they will be motivated to be present in class. Students who do not attend lectures, who do not complete the optional weekly assignments or who give minimal preparation for assessments are said to have low levels of voluntary engagement in activities designed for their benefit, and should have lower outcomes. Levels of participation are taken to indicate motivational levels.

A total of 324 students across three semesters of first-year undergraduate accounting students completed a survey, providing evidence that attendance at lectures and tutorials has a statistically significant relationship with course grades. Participation was tested across a number of self-reported activities: attendance at lectures and tutorial sessions, level of active involvement in tutorials, and estimated hours spent in preparation for assessments, weekly tutorial assignments and group activities. The final course grade was taken as the measure of academic performance.

The statistical search for significant factors on student outcomes included a basic correlation analysis and linear regressions that included the factors highlighted by correlations. The regressions were run using both an all-in-one entry method and a stepwise analysis. As might be expected, many of the participation variables are significantly correlated to each other; they relate to similar activities. With respect to influences on course grades, four participation variables showed statistically significant relationships: attendance at lectures, attendance at tutorials, participation in tutorial activities and the use of Blackboard (an online information management system).

The results for the linear regressions relating to course grades against the four significant variables explains approximately ten percent of the variability in course grades, with attendance at tutorial sessions showing the highest single level of explanatory power. This indicates other factors not captured in this survey as having considerably more influence on grades, but this is still a significant influence. Also, there are statistically different grades between those who took part in the survey as compared to those who did not answer the

survey questionnaire, between those who attended class and those who did not. In the world of students seeking good grades, surely this is important.

This reinforces the importance of personal contact between students and instructors, and is not a surprising result. What is surprising is the lack of statistical significance of the other variables tested, especially weekly hours of preparation. With further investigation into this topic area required, this study has shown that participation (attendance) has an impact upon the academic achievement of students. The importance of this relationship needs to be considered by both perspectives: the teachers involved with delivering the education and the students who attend (or do not attend) class.

Ten percent of a course grade is a minor influence in comparison to the ninety percent that is not captured by this model. However, it is still significant; it makes a difference to student outcomes. Teachers need to recognise the importance of their role in motivating their students, at the very least to motivate them to attend class. Student learning is enhanced for those who attend lectures; they are better able to learn the content of the course and to understand the material to a deeper level, resulting in better grades. By encouraging attendance, their learning experience becomes enriched.

Students also need to realise that their participation (attendance) in class has an impact upon their learning experience and to take responsibility for helping themselves. Currently, students will self-select whether to come to class or not; it is not compulsory.

The question is, how to explain the other ninety percent? Students must have a solid base of accounting knowledge, techniques and application, in order to pass the course. They have learned about the subject, so can answer the questions and complete the activities. Potentially, some students have prior knowledge that they have gained from other learning environments, such as high school. This means that their base knowledge is greater, than those that have not had the prior exposure. For these students who have prior knowledge, attendance may not make any difference at introductory level courses. However at higher levels, when the content becomes new at second or third year, this relationship between participation and grades would be expected to have a higher explanatory power. And learning how to make the most of classroom experiences will benefit future student outcomes.

*2 - The use of unstructured business cases is often cited as enhancing a deep approach to learning, but in the context of this project, this claim was not supported; and*

*3 - The sample of students for this focus area showed an increase in surface learning styles over the semester.*

These two findings are discussed together, since they represent distinct outcomes but they arise from the same investigation.

Accounting teachers have long appreciated the value of business cases in classroom teaching as a vehicle for promoting active engagement and deep learning (Lucas, 2001; Duff, 2004). Accounting educators also appreciate the value placed on these abilities by employers, as their students seek meaningful employment post-graduation in an increasingly competitive world. Based in the belief that unstructured business cases will foster investigative skills and critical analysis, the relationship between the nature of business cases with respect to learning approach was considered.

Using unstructured business cases and group projects has been associated with increasing the benefits of active learning, including increased motivation, engaging with learning at a high level of critical thought and fostering a sense of excitement in the classroom (Bonwell & Eison, 1991). The nature of accounting work undertaken by graduates has changed over time, from supporting technical roles that reinforced traditional caricatures of accountants

into business advisory roles of a wide variety. The skills gained in the classroom need to prepare undergraduates for future employment requirements in a meaningful way, which includes the ability to consider and recognise business situations for what they are, to analyse alternative approaches to enhancing the business and to design an implementation plan.

The focus activity for this study involved intermediate level (second year) accounting students. During their weekly tutorial streams, each class of students was divided into six groups. They were given about three weeks to meet and prepare an oral presentation, to be given to their tutorial class. Three groups in each tutorial class were given an unstructured business case, a summarised contextual situation with an embedded accounting issue, and then asked to prepare their presentation around their “solution” to the problem. There were no right or wrong solutions, though the resolution of the issue needed to be based in accepted practices and policy guidelines. The other three groups were given a set of questions around which to structure their presentations. The questions were drawn from the unstructured cases, but there was no contextual information provided; information was given that enabled a “solution” but there was neither imaginary business nor characters described. In all cases, the groups were assessed on presentation skills, on the ability to communicate ideas and to stimulate class discussion, not on the content or the “correctness” of the response to the situation or the list of questions. This was done in order to avoid unfair distinctions between the types of presentation activity.

The expectation was that those groups who were presented with less structured and more contextualised situations would engage with the material in a considered and meaningful way, that they would display deep approaches to learning. These students were expected to demonstrate a different approach to learning than those students whose presentations were based around a series of structured questions with no business contextualisation.

In order to test for differences in deep and surface learning approaches, the revised two-factor study process questionnaire (SPQ) was used from Biggs *et al.*, (2001). Each student has a score calculated from each SPQ for their deep learning approach and one for their surface learning approach. The whole class was given an SPQ at the beginning of the semester, and then again after the group presentations had occurred.

An analysis was conducted for reliability and confirmatory factor analysis based on actual results from this study, which confirmed that the 104 students completing the two SPQs interpreted the questions in a manner consistent with the concepts described by Biggs *et al.* (2001).

The surprising result was that there was no significant change in students’ scores for deep approaches to learning between the beginning and the end of the semester. There was, however, a statistically significant difference in their surface scores. In particular, the students indicated an increasing level of surface learning over time, contrary to expectations. There was no difference detected that could be ascribed to the type of business case used.

The interpretation of these results can be found, we believe, in the concept of “approaches to learning.” Perhaps one of the most challenging questions for teachers is that of the strategic learner. One of the most important results of this study is to suggest that students learn what they need to learn. Scores for surface approaches to learning increased over time, despite efforts to provide a learning experience designed to increase deep (and to decrease surface) approaches. Students find out what will be tested and examined, and they allocate their attention, their time and their resources to achieving just that.

A large part of accounting education, by definition, involves learning practices and procedures. To function successfully, an accounting graduate needs to have the broader



levels of concept, theory and principle, but to pass courses during their studies, many succeed very well by learning “how to do it.” As long as courses are designed to be examined along relatively mechanical methods, then students will focus on doing just that. The course in which this study is situated should lend itself to the use of unstructured business cases very well. But it bases ninety percent of the course grades on two assessments: a mid-semester test and a final exam, both based on calculational short problems. Students may well have decided that the ten percent of their total grade given to the presentation was not important enough to devote the effort to enhance deep learning approaches. They may have decided that it was not worth the effort.

And if students are strategic learners, taking their cues from the context in which they find themselves, similar reflections should be focused on educators as well. Students are finding today’s academic environment demanding; so too are the educators. The pressure to publish high-quality research puts pressure on teaching resources. In many parts of the world, class numbers are rising, partly because of the attractiveness of accounting as a way for graduate employment and partly because of declining numbers of accounting academics. If an academic now views enrolments of 100 as a small-sized class, then no wonder assessments are designed to be easier to mark. Reviewing 100 in-depth reflective essays cannot be done in a short space of time, so we produce tests and final examinations that can be marked quickly. We are, in other words, behaving just as strategically as our students. And this will continue until there are adequate resources available to enable more personal and individualistic attention for our students.

*4 - For students in part-time paid employment, there is little effect on grades, but the perceived level of interference is related to grades.*

Students relate significant amounts of time spent on extra-curricular activities, whether on representational sports teams, paid employment, church or social activities. Teachers are asked to avoid holding tests at particular times, or extensions for assignments are requested, because of absences from campus due to non-study activities (Curtis & Shani, 2002). Dating back from the 1990s, the relationship between outside activities, work in particular, and study has been noted (Kember, 1999).

This particular investigation involved intermediate-level (second-year) accounting students. Students were asked about the number of hours per week spent on a range of activities (sport, non-study computer time, reading, and paid employment) and the perceived level of interference of work on their studies. The increasing numbers of students seeking paid employment during term time in particular is causing some concern amongst academics. In New Zealand, nearly 50% of students have a student loan courtesy of the government (Statistics New Zealand, 2011). In 2013, over 700,000 students had outstanding student loans; requirements for repayment can have unintended consequences, such as delays in having children or difficulties in financing home ownership (Student Loan Scheme, 2012/13). Financial constraints may be playing an increasingly significant part on student life-styles. While some students indicate they seek employment only during the summer holidays, or of an occasional nature, others describe the challenges of balancing nearly full-time jobs with nearly full-time study programmes.

To test this theme, correlations and linear regression compared the time spent in extra-curricular activities, including paid employment, and the perceived impact of employment (the independent variables) on course grades (the dependent variable). Not all students provided complete information about all the questions asked. Of the 195 students who completed the questionnaire, 46 provided enough information relating to paid employment and other activities to enable some analysis. Another 79 students reported extra-curricular activities that did not include paid employment. The rest of the sample did not report any outside activities.



Regression analysis indicates that only the hours in paid employment and the perceived impact of this has any statistical relationship to course grades; on the sub-sample who works, twenty percent of the variation in course grades is explained by the two factors. None of the other extra-curricular activities showed any relationship to grades for any of the students in the sample. Stepwise regression indicated this is almost entirely due to the perceived level to which employment impacts on study; the hours contributed to a lesser degree. Surprisingly, the relationship is positive; the more a job is perceived to interfere with studies, the higher the grades.

Further, for the two groups of students that indicated some outside activities, the number of hours (average) spent on reading, sport, computer and social activities was roughly the same; the total average non-study activity hours differed between the two groups only by the average number of hours in paid employment. Grades both groups ranged from fails to very high levels of success, averaging around 65 (out of 100) for both. Students who did not report any outside activities had an average grade of 62.

Students recognise that employment has an impact on their studies. The key to demonstrating a successful impact appears not to be the number of hours taken up with extra-curricular activities, it is the degree to which students believe there is a negative impact. There is a need for more investigation into this area; the conclusions proposed by Kember (1999) may well provide the explanation. It is the coping mechanisms and the recognition that competing demands on time need to be managed that is the key to success.

## Future Themes

The themes discussed thus far have been completed. There are at least three more areas to be investigated in the future, based on data already collected. One relates to international students, and their educational experiences as students for whom English is a second language. Data has been collected relating to their perceived ability in speaking English, where and how they learned the language and their living arrangements. A second theme relates to goals and graduate attributes, and how these have changed across their degrees. A third relates to leadership attributes, taking the concept of leadership into the realm of social responsibility. The theme is positioned in a framework that identifies student attributes, elements of their social awareness, and seeks to enhance those that have been shown (through prior research) to be related to future community leaders.

The themes described thus far all relate to undergraduate students, and are viewed by this team as being Phase I. Phase II is under development, and relates to graduates as they enter employment. The New Zealand and Australian professional accounting bodies have recently merged<sup>1</sup> and a cross-Tasman project is being designed with colleagues at RMIT (Melbourne) to investigate the transition from university studies into the work force from both the student and the employer perspectives. Universities have Graduate Profiles, and one question is whether students have been enabled to achieve the desired graduate attributes. The other question is whether these Profiles reflect employer needs in the current global business context.

## Implications

Educators need to keep investigating the nature and style of classroom practices. Teachers need to adapt to changing student cohort, to stop reacting and be proactive. Students need

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<sup>1</sup> The New Zealand Institute of Chartered Accountants and the Institute of Chartered Accountants Australia are now known as Chartered Accountants Australia and New Zealand. The requirement for a three-year Bachelors degree followed by three years of work experience before gaining full membership remains unchanged.

to adapt to tertiary-level expectations, and to take responsibility for their own learning too, but unless we help them learn how, the transition from high school into university will continue to be overwhelming for some. Teachers need to guide students into the world of independent learning, to enable students to focus on their own futures in a more direct and meaningful way. The teachers can start the process, and students need to understand their role in continuing the process. There are many exceptions of course, students and teachers both who are already actively engaged in successful forward-looking practices. Indications are that there are still many who do not.

One implication from this project is to question the validity of ongoing invitations to develop online learning packages, at least with respect to some types of learning. Accounting has a mixture of knowledge-styles (some very procedural, some quite opposite). Students gain from attendance, from real-time information about the course, the assessments, details of useful resources and, perhaps most importantly, personal contact with teachers and with other students.

There is also a debate over whether course grades are the best indicator of student outcomes. Grades only measure one aspect of “learning” and should be used with caution. Grades are commonly used in research, however, and (assuming the assessments are fair) provide a strong indication of level of understanding of the subject.

In accounting, there is a debate over the value and importance of style and frequency of assessment. Many teachers tend to justify frequent small-value assessments (such as weekly tutorial assignments) on the grounds that students would not do the work without some marks being attached. Summative assessments are time consuming to administer and mark, and reward certain types of learning behaviour. Others propose that if teachers do a better job of motivating the class, then students will be more willing to independently engage with the material, which leads to an increase in formative and a corresponding decrease in summative assessments. This includes the discussion over strategic teaching practices, which has resource implications. In a world of constrained resources, and in the field of education where academic salaries comprise the majority of fixed costs, it is difficult to decrease student to staff ratios.

Strategic learners need to be accommodated. This is a fact of life now, that students have far more demands on their time than previous generations. It costs to be engaged in tertiary-level study, so students are often working to help reduce future debt. Many play representative sport, or have family or community commitments. The time commitment does not provide a valid indicator of academic results.

Educators work in an environment that encourages strategic teaching methods too. There is pressure to develop assessment methods that are efficient and effective, and in accounting at least, a push away from qualitative (time-consuming) assessments for large classes. We can hardly blame students for targeting the minimum required when we behave in a similar fashion.

The themes currently under investigation and those planned for the future will uncover further information relating to our international students. The initiation of Phase II, moving from undergraduate experiences into the field of graduate employment, will provide even further information about how to continue to improve accounting education for our students.

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