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## Undergraduate study behaviours and academic performance: A qualitative analysis of students' retrospective comments

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### Abstract

*Previous studies using large-scale correlational data have suggested that study behaviours play a significant role in influencing academic outcomes. This study adopts an alternative approach using a qualitative analysis of students' retrospective comments to establish links between students' reported study behaviours and their grades. Using survey responses and grades from 175 students enrolled in their first-year courses at a New Zealand university, a content analysis revealed both similarities and differences between the higher (grades above 75), middle (grades between 60 and 74), and lower (grades lower than 60) groups of students. All students, irrespective of their grades, identified the difficulty of adapting study behaviours to resolve time and information management issues. Academically successful students appear to possess a higher degree of achievement motivation, thus indirectly suggesting that conscientiousness and resilience may have been an underlying factor in their academic outcomes. The impact of attendance as a variable influencing academic performance will also be discussed.*

### Keywords

Study behaviours; attendance; students' perceptions; academic performance; qualitative analysis

### Introduction

The increasing diversification of higher education (Teichler, 2008) has prompted researchers to better understand how various student populations are adapting to the norms and expectations of studying at the tertiary level. The first-year experience has become a notable focus in recent research (James, Krause, & Jennings, 2010; Upcraft, Gardner, & Barefoot, 2004), acknowledging the significant challenges that students face as they transition from their previous learning contexts (e.g., secondary to tertiary education, overseas to local, employment to academia). Tertiary education providers are paying increasing attention to students' needs and experiences to directly address issues of student satisfaction or attrition. The first year of study thus represents an important vantage point to take stock of how students are managing their studies. The changing demographic profile of first-year students in tertiary-level education (Crissman-Ishler, 2005) has had an impact on how students from various age and cultural groups are approaching their academic studies and transitioning to tertiary-level study.



With the decrease in time devoted to study (Babcock & Marks, 2010; Mortenson, 2011), students are experiencing increasing pressure to manage their time efficiently with various academic and non-academic pursuits (Greene & Maggs, 2014; Nonis & Hudson, 2006). For at-risk students who may be unfamiliar with the norms, expectations and procedures expected at the tertiary-level, the ability to cope with their perceived workloads (Kember, 2004; Kyndt, Berghmans, Dochy, & Bulckens, 2014) is crucial for their academic success.

Previous research has identified the impact of various factors on academic performance including motivation and identity (Briggs, Clark, & Hall, 2012; Fazey & Fazey, 2001; Haggis, 2004; Lizzio & Wilson, 2004; Smith & Oyserman, 2015), employment (Ford, Bosworth, & Wilson, 1995; Greene & Maggs, 2014; Nonis & Hudson, 2006; Wenz & Yu, 2010; Zoysa & Rudkin, 2007), and a combination of factors (e.g., age, prior education) (Britton & Tesser, 1991; Grave, 2011; Macan, Shahani, Dipboye, & Phillips, 1990; McKenzie & Schweitzer, 2001). Tertiary-level instructors and advisers may have little or no influence on altering students' characteristics or circumstances (e.g., age, prior education, employment); they may, however, be able to suggest or facilitate the adoption of different study behaviours that could lead to improvements in academic outcomes. Study behaviours are reflective of an interrelated set of cognitive, metacognitive and affective components that have an impact on academic performance (Hattie, 2009). Gurung, Weidert, and Jeske (2010, p. 28) state that they are behaviours that serve "to acquire, organize, synthesize, evaluate, remember, and use information". Crede and Kuncel (2008, p. 427), in their meta-analytic investigation, suggested a broader definition encompassing study habits, skills and attitudes.

... study skills refers to the student's knowledge of appropriate study strategies and methods and the ability to manage time and other resources to meet the demands of the academic tasks. Study habits typically denotes the degree to which the student engages in regular acts of studying that are characterized by appropriate studying routines (e.g., reviews of material) occurring in an environment that is conducive to studying. Finally, study attitudes is usually used to refer to a student's positive attitude toward the specific act of studying and the student's acceptance and approval of the broader goals of a college education.

Crede and Kuncel's (2008) meta-analytic investigation revealed that study skills (i.e., information processing, selecting main ideas), study habits (ability to concentrate, self-monitoring, reviewing, time management), study attitudes (academic interest, values learning, prioritises study) and study motivation (drive, sustained effort) all exhibited strong relationships with tertiary-level academic grades. The authors asserted that these study behaviours are strong predictors of tertiary-level performance. Nonis and Hudson (2010) surveyed 201 undergraduate business students to elicit students' use of study time and perceptions of their study habits. They found statistically significant interactions between students' reported length of study time and their use of particular study habits (i.e., having access to a good set of notes, ability to concentrate). This led to their conclusion that effective study behaviours may have a substantial impact on academic performance more than simply allocating time towards study. Gurung et al. (2010) administered a 35-item Study Behaviour Checklist to 121 undergraduate psychology students. The authors looked for correlations between students' perceptions of their study behaviours and their scores on a 60-question multiple-choice exam. Class attendance, accessing practice exams and the ability to explain study material were positively correlated with higher exam scores. On the other hand, reviewing lecturer's notes, reviewing their own study notes, highlighting important information and asking for additional help or information from classmates or tutors were negatively correlated with their exam performance. They acknowledge the difficulty in identifying optimal study behaviour by corroborating previous research that suggests, "there are no strategies that work all of the time, for all students, in all classes" (p. 32). The authors' point suggests that students need to identify their own set of study behaviours that align with their individual learning goals and circumstances.

Previous studies have tended to use a statistically valid number of closed-ended survey questions to find correlations between study behaviours and academic performance (i.e., GPA or exam scores).

This study adopts an alternative approach by using students' open-ended reflective comments to gain a first-person perspective of their study behaviours. Ramsay, Barker and Jones's (1999) study used semi-structured interviews with 20 first-year undergraduate students to identify critical incidents that impacted their learning. Students cited assistance from the support centre and interactions in study groups or with tutors as positive. Problems with lectures or lecturers were the most negatively cited category. Lizzio and Wilson (2004) surveyed 275 first year tertiary students from behavioural science, engineering and management programmes. Their results indicated that students perceived the importance or non-relevance of developing specific skills (e.g., writing, problem-solving) in relation to their future professional identities. Van der Meer, Jansen, and Torenbeek (2010) used survey and interview data with approximately 2000 first-year students across two research sites. Time management was identified as a significant challenge for many students. The above studies indicate that students are highly cognizant of their learning goals, abilities and problems.

In summary, this study explores students' perceptions about their learning by allowing them to use their own words to describe what is important, relevant or problematic in their life as a tertiary student. By cross-referencing students' reflective comments with their grade performance, higher and lower achieving students may have different perceptions of their study experiences. This study fills a gap in the literature by using a qualitative approach to uncover relationships between study behaviours and academic outcomes, thereby providing a complement to previous studies that are based on correlational data. In the next section, I will discuss the context of the research study with an explanation of the study participants and instruments.

## Research site and context

Student participation rates in New Zealand's tertiary education institutions are relatively small compared to other Organisation for Economic Co-operation and Development (OECD) membership countries. The Ministry of Education in New Zealand reported that 418,000 students were enrolled in formal tertiary study in 2013 including international students (48,000) and students between 25 and 39 years of age (100,074 domestic and 15,119 international) (Wensvoort, 2014). Tertiary education providers in New Zealand cannot rely solely on domestic high school leavers and have continued to provide a range of study opportunities across universities, polytechnics, wānanga (Māori public tertiary institution) and private training establishments (Findsen, 2011).

The motivation for this study was the need to find ways to support all students in their transition to studying and writing at the tertiary level. Staff reports from the learning support centre and academic writing courses at a tertiary institution in New Zealand suggested that enrolled students in two first-year management courses were in particular need of assistance as they frequently requested help with their writing assignments that was beyond their tutors' roles and capabilities. With the goal of providing maximum support for staff and students, and with the realisation that departments had minimal resources to work with, the challenge was to better understand the issues that confronted potentially at-risk students enrolled in their first year. Since the College of Business attracts large numbers of students from various backgrounds, this study aimed to investigate how they were coping with their writing assignments and what kinds of issues they were facing.

The research participants for this study were 175 undergraduate students enrolled in three, first-year courses at a New Zealand university. The two largest cohorts of students were from China (39%) and New Zealand (27%), which then decreased in number for the other English-speaking (i.e., England, South Africa, Australia), Asian, European, Middle Eastern and Polynesian countries. The mean age of the students was 22.4 and the gender balance was 57 percent females and 43 percent males. Two introductory management courses had 1500-word case study assignments as part of their assessment. These assignments required students to synthesise ideas from the lectures, textbook and readings to address the case study problem. A third course was investigated which included students from non-English language backgrounds and focused on developing their academic writing skills. In the first of the 12 weeks of classes, I invited students to participate in the research study and asked students to fill

in background questionnaires and consent forms. Class observations of the weekly lectures and tutorials were also conducted to gain an understanding of their learning environment. In the last week of classes, I administered a second questionnaire to gather reflective comments on their experiences during the semester. After all grades were finalised by the College, I obtained access to the students' assignment grades.

## Data coding and analyses

A thematic content analysis (Guest, MacQueen, & Namey, 2012) was conducted to identify themes within the 673 survey comments. Responses from six survey questions were grouped into three themes: (a) suggestions for change, (b) study challenges, and (c) positive experiences (see Table 1 below).

**Table 1.** Three Themes from the Survey Questions

<b>1. Suggestions for Change</b>
a. Do you have any suggestions for changing the course content or assignments?
b. What suggestions would you give to lecturers / tutors or administrative / support staff to help improve your learning experiences?
<b>2. Study Challenges</b>
c. What were the main challenges that you faced about studying here? How has this semester changed your study habits or goals for the future?
d. What study advice would you recommend to another student?
<b>3. Positive Experiences</b>
e. What knowledge or skills that you have learned in this course do you feel will help you with your future career?
f. What was the most positive moment related to your studies this semester?

After students' comments and demographic information were imported into NVivo, a grounded theory approach (Glaser & Strauss, 1967) was used. As patterns emerged in the data, nodes were assigned, reorganised and synthesised. 'General comments' (e.g., none, no idea) and unelaborated comments about their study environment (e.g., parking, library) were excluded in the final analysis. The next section provides further details regarding the nature of the codes used in this study.

## Coding categories

As summarised in Table 1 above, three themes were identified based on the study's six survey questions. The first theme relates to students' suggestions for a change in the way they were instructed or assessed during the semester. 'Information management' was the most complex of the coded categories and represents what researchers have termed 'personal information management' (Jones, 2006; Mizrahi & Bates, 2013) to describe the ways that people collect and organise information. As students reflected on their learning experiences, they made references to: (a) Is it relevant to my learning? (b) Is there too much or not enough information? (c) Do I understand the information? And (d) Can I access this information? These sub-categories revealed their desire for the lecturer to address concerns related to the relevancy, quantity, clarity and accessibility of information given. A 'teaching' code was assigned to comments that represented students' requests for the lecturer to change his/her general teaching style (e.g., make it more interesting) or particular teaching materials (e.g., change the textbook). 'Assessments' was a third category that indicated students' appeal to change the quantity of

assessments (e.g., more assessments to understand the content better) or how they were graded (e.g., increase the essay value). The fourth and final category was ‘interaction’, which signified students’ wishes to have more engagement with their peers (e.g., more group discussion). All of the above categories could have been subsumed under one umbrella category of teaching, but the aim of the analysis was to tease apart aspects of instruction.

Perceived study challenges was the second overarching theme of students’ survey responses. These comments included elements of their study environment or personal attributes that were identified as demanding or difficult to overcome. The first coding category, ‘time management’, contains many of the themes cited in research by van der Meer et al. (2010). This study identified a number of sub-categories including: (a) general time issues (e.g., managing time), (b) class attendance (e.g., need to attend class), (c) preparation or work ethic (e.g., start studying early), (d) workload (e.g., underestimated the amount of work), and (e) other time commitments (e.g., timetable clashes, jobs, family). ‘Time management’ thus represents students’ need to organise their academic studies in relation to self-perceived internal and external pressures placed by themselves, their other courses or off-campus responsibilities. A second category, ‘skills and abilities’, included students’ self-perceived lack of skill (e.g., reading, language), abilities (e.g., concentration), or general study skills (e.g., how to study). The third category, ‘teaching and assessments’, was initially separated in earlier coding attempts but was collapsed into one category due to its general reference to difficulties with the teaching or assessments (e.g., the essay, tutor’s grading standards). ‘Interaction’ was the fourth category and reflected students’ perceived challenge with either working alone (e.g., independent study) or working with others (e.g., forming study groups). This category slightly differs from the ‘interaction’ category in the previous theme since it captures not only the difficulties associated with peer interaction but also with experiences of non-interaction, isolation or learning on one’s own. The final coding category, ‘motivation’, included students’ difficulties with making an effort and coping with difficulties (e.g., laziness, lack of commitment, stress).

The third overarching theme from the survey questions was related to students’ positive experiences of studying or learning as a tertiary student. ‘Knowledge and skills’ expressed students’ satisfaction with acquiring specific content knowledge (e.g., learning legal aspects) or particular study skills (e.g., reading, problem-solving, communication). The second category, gaining a sense of ‘academic achievement’, expressed students’ positive feelings towards their marks or completing an assignment (e.g., receiving an A, passing assessments, submitting assignments on time). The third category, ‘interaction’, slightly differs from the content from the same coding category in the other two overarching themes due to references to the kinds of support networks that students formed in class or in organised study groups. Thus, the comments highlighted students’ positive experiences of peer interaction instead of recommendations to increase interaction or its identification as a study challenge. ‘Motivation’ was a fourth category that included reflections about students’ self-perceived improvements in their motivation to study or clarification of their career paths (e.g., learning to make an effort, better future direction). The final coding category, ‘study break’, contained comments about students’ positive memories of less intense study periods or breaks from study (e.g., start of term, study break). Figure 1 below provides a visual description of the three overarching themes and NVivo-derived coding categories.

Questions about their class attendance were also included to tap into their self-reported perceptions of their time management (i.e., study habits), prioritisation of their studies (i.e., study attitudes) and sustained effort (i.e., study motivation). This section of the survey asked students to self-report the percentage of lectures and tutorials attended and list reasons why classes were missed. Students’ answers to both sets of questions about students’ perceptions of their learning experiences and class attendance were separated into three groups according to their grades on their written assignments. At the time of the investigation, the university followed College-wide grading distribution guidelines in which a mark of 75 and above represented an A grade, 60–74 indicated a B grade, and between 50 and 59 a C grade. These three categories of grades were used to separate the comments from high ( $n = 39$ ), middle ( $n = 74$ ), and low ( $n = 62$ ) achieving students. In the following section, the results of the

thematic coding analysis of their study experiences will be presented first, followed by an analysis of their self-reported responses to questions concerning their class attendance.

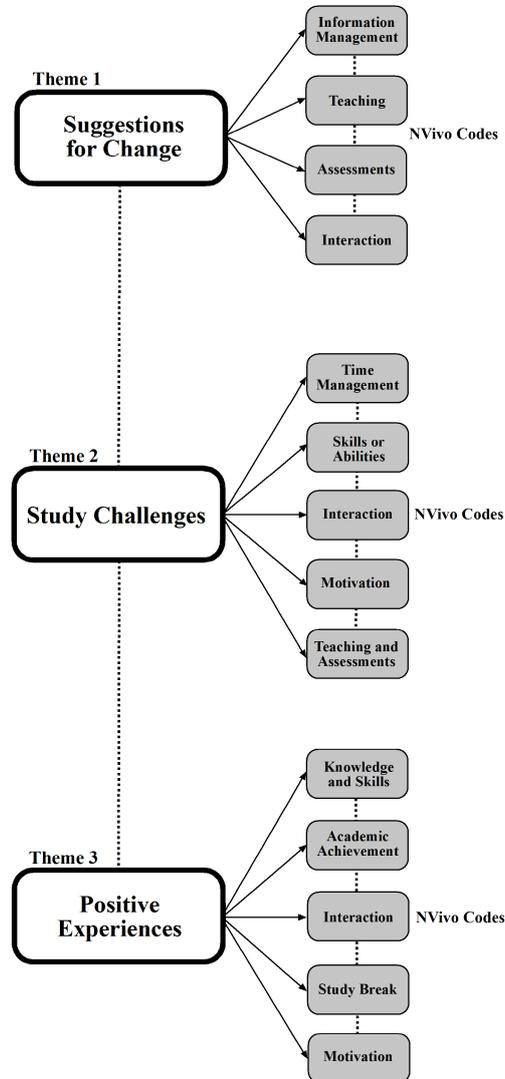


Figure 1. Coding themes and categories

## Results and Discussion

Within each of the three major categories of questions, students’ comments revealed how much or how little attention was paid to particular aspects of their learning. Table 2 below provides an overall summary of the percentage of comments for each coding category.

**Table 2. Major Coding Themes**

<b>Suggestions for Change</b>	<b>%</b>
Info Management	48.1%
Teaching	29.5%
Assessments	20.2%
Interaction	2.3%
<b>Study Challenges</b>	<b>%</b>
Time Management	49.4%
Skills or Abilities	19.6%
Interaction	13.9%
Motivation	9.1%
Teaching + Assessments	8.0%
<b>Positive Experiences</b>	<b>%</b>
Knowledge and Skills	37.7%
Academic Achievement	29.0%
Interaction	15.9%
Study Break	13.0%
Motivation	4.3%

In terms of ‘suggestions for change’, close to half of students’ comments suggested that their lecturers provide more support for their ‘information management’ (48.1%).

A large percentage of the students in this study felt that their study skills (i.e., information processing, selecting main ideas) and study habits (ability to concentrate, self-monitoring, reviewing) could have been better utilised with changes to the lecturers’ approach to delivering information. Examples of students’ comments are shown in Table 3 below.

**Table 3. Sub-Themes of ‘Information Management’**

Sub-Themes	Examples from Students’ Comments
Relevancy	<i>we are only tested on three chapters in the exam, ensure content students receive are on the test, use more current real life examples that students can relate to, more on information we would use in the real world, focus less on things we don’t use in real life</i>
Focus	<i>reduce the reading of chapters to main points, cut down on the volume of content, less content, a lot of course content to remember, not have too many readings, be more concise with what content they have in their lecture slides, keep lectures short and concise when possible, why not cover these (chapters) in detail and cut back on other content, , the course content is bit confusing, focus deeper on some things as opposed to covering everything, review better summary notes, reinforce what we have learnt with questions., too many scattered points to memorize, be more specific, give some main points in section A</i>
Accessibility	<i>record lectures and post online, post lecture recordings, upload lecture videos, put up slides earlier, put the lecture slides and other information up earlier, put reading in A not in B, have C available at the beginning of the semester</i>

Within the theme of ‘study challenges’, ‘time management’ (49.4%) represented a significant concern for the students enrolled in these first-year courses (see Table 2 above). This echoes the findings from previous research (Masui, Broeckmans, Doumen, Groenen, & Molenberghs, 2014; Trueman & Hartley, 1996; van der Meer et al., 2010) that assert the impact of time as a factor on academic outcomes. Time management can be defined as “behaviours that aim at achieving an effective use of time while performing certain goal-directed activities” (Claessens, van Eerde, Rutte, & Roe, 2007, p. 262). As students react to competing and complementary demands of their time, time becomes a commodity that must be continually monitored and allocated towards impending deadlines. Although time management is a study habit, students may feel that some aspects of this study behaviour may be beyond their control. Table 4 below shows examples from students’ survey comments that identify issues related to time management.

**Table 4. Sub-Themes of ‘Time Management’**

Sub-Themes	Examples from Students’ Comments
Starting Study or Assignments Early	<i>start studying in the first week, start week 1, start to study as semester starts, start assignments early, importance of starting assignments early, try to work harder sooner set mini deadlines</i>
Avoiding Procrastination or Maintaining a Good Work Ethic	<i>don't leave assignments to last minute, try not to put off assignments, don't get behind! keep up with reading and work or you will not catchup, catching up on work, keep on top of the work, keep on top of notes/ lectures, try to stay ahead, stay ahead! don't fall behind, you need to be more up to date during the semester, finding time, managing my time, proper time management</i>
Preparing, Reviewing, or Revising	<i>learn how to prepare before class, go to class and prepare before lectures readings, read the texts ahead of time! read textbook early, read the weekly chapters, reading the textbook outside of exam study week, definitely keep up on lecture notes and review them at least once a week to keep them fresh in your mind, revise any subject before going to the class.</i>
Length of Study Time Required	<i>my time management has changed I spent lots of time to study, I need to spend more time after class to study them, the hours</i>
Managing Other Commitments	<i>the main challenge I faced was to study full time while working full time, time management is a huge problem for me I get distracted easily with friends/family commitments, the main challenge is the studying time and how I manage my time as I live very far away from the uni</i>

With regard to ‘positive experiences’, students cited the acquisition of ‘knowledge and skills’ as their most positive experience (37.7%) (see Table 2 above). This suggests that students were well aware of how useful the content knowledge and study skills were for their immediate and future lives. One caveat in interpreting this finding is that this result is directly attributable to a question prompt in one of the survey questions. An alternative interpretation might conclude that gaining a sense of ‘academic achievement’ was just as important for students (29%) since there was no significant difference in percentages between the two categories. Thus, students’ feelings of satisfaction for having completed assignments or for achieving grades that validated their study efforts were vitally important for the learners in this study.

**Table 5. Sub-Themes of ‘Knowledge and Skills’**

Sub-Themes	Examples from Students’ Comments
Knowledge about the Discipline	<i>knowledge about my major, general legal background and ethical overview of business, knowledge of ethics in the workplace, legal issues involving everyday life, rights as an employer, knowing more about contracts and legal rights, all about my rights and ethics, legal terms, the law and acts in NZ, understanding of basic NZ laws, HR, general knowledge about ethics in businesses, better knowledge on laws that involve everyday situations, the knowledge about business law and how a company has to follow fair trading act, I feel I have a better understanding of how the law works, legal knowledge, management skills, contributing to organization planning think tanks, learned various theories on management, the knowledge I gained was how management works in real life, I understand the manager’s role/position better</i>
Application to their Immediate and Future Careers	<i>knowledge and understanding for an upcoming career, acts that may be of use in the future, good knowledge to help with my life, study and work, I have applied a lot of these skills to work as I’m still in a supervisory role, I am currently working in a management role, internship opportunities</i>
General Academic and Cognitive Skills	<i>taking time to identify ethical issues and working through the problem in an informal and systematic way, problem solving, critical thinking, logical thinking, knowing ideas on planning and decision-making processes,</i>
Teamwork and Communication Skills	<i>group work, teamwork, communication skills, communicate with people, working in groups, how managers should behave to get the most out of their teams, skills to work in team environments, opened my mind to other ways of doing things</i>
Study Behaviours	<i>time management, being prepared, work independently, the expected level at university, study skills</i>

The challenge of improving students’ attitude and motivation towards their studies appear to be influenced by how positive students feel about what they are learning (i.e., acquisition of knowledge and skills) and how successful they are in their assessments (i.e., sense of academic achievement). Success at study increases learners’ self-efficacy (Bandura, 1997) or their predictive belief that they will do well in the future, and mediates learners’ future goal-setting (Bong, 2013). Examples from students’ comments for these two categories are listed in Tables 5 above and Table 6 below.

**Table 6. Sub-Themes of ‘Academic Achievement’**

Sub-Themes	Examples from Students’ Comments
Academic Outcomes	<i>getting a good grade on assignments I worked hard for, achieving grades that I aimed for, getting high grades for work which I put emphasis towards, my first assignment was an A! huge push to really nail this semester, my results in all papers, were better than what I expected, doing well in my assignments, when I passed exam and paper, passing my essay, when we got our assignment back and saw good grades very satisfying, getting good grades, getting good marks, I thought my marks was so bad compared to my expectation and tutor said it’s well above average, getting an A+, getting good results for the exam, passing everything so far, passing all my assignments so far, I did really well being top student in class, good assignment marks, receiving good results for assignments, higher marks than expected, passing all assignments, getting good results for assignments, passing finance test with flying colours, excellent marks for a difficult assignment, solid marks for organisation and management assignments, doing well on assignments and tests, passing a finance test that I studied hard for and felt good about it, receiving A+ on some assignments, getting my essay results, getting high marks, when I know I have passed, when I get good scores, achieving an A in my first assignment, gaining an 80% and 85% on two essays, my assignment grades compared to previous semester, pass all the final papers, pass all the papers and got a good grade</i>
Completion	<i>When I completed my essay or assignment, when I finish my assignments, completed all my assignments, meeting deadlines, after submitting assignments, finishing assignments to a high standard, submitting my assignments online was pretty rewarding just knowing they were completed</i>

### Differences in perceptions between higher and lower achieving students

When students’ comments were cross-referenced with their grades (see Table 7 below), a few notable differences existed between the students who received higher and lower grades on their written assignments. With regard to students’ suggestions for change, the higher achieving students (grade >75) tended to recommend changes to assessment whereas the lower achieving (grade <60) students commented more on altering teaching practices. An inverse relationship thus existed between higher and lower achieving students’ comments towards teaching and assessment. This could indicate that students who received higher grades were generally more focused on the end goal of fulfilling their grade expectations.

In terms of study challenges, the lower achieving students (grade <60) mentioned considerably more problems with teaching and assessments (15.9%) than the other higher achieving students (2.9% and 5.3% for grades 60–74 and <75 respectively). Since the ‘Teaching and Assessments’ category reflects general or non-specific challenges (e.g., the essay, the assignment), the lower achieving students appeared to have been unable to pinpoint or articulate specific details of the challenges they had faced.

**Table 7. Grade-Related Differences in Perceptions**

<b>Suggestions for Change</b>	<b>Grade &lt;60</b>	<b>Grade 60-74</b>	<b>Grade &gt;75</b>	<b>All Grades</b>
Info Management	50.0%	47.4%	47.6%	48.1%
Teaching	36.7%	29.8%	23.8%	29.5%
Assessments	13.3%	19.3%	26.2%	20.2%
Interaction	0.0%	3.5%	2.4%	2.3%
<b>Study Challenges</b>	<b>Grade &lt;60</b>	<b>Grade 60-74</b>	<b>Grade &gt;75</b>	<b>All Grades</b>
Time Management	41.1%	68.6%	50.0%	49.4%
Skills or Abilities	18.7%	14.3%	18.4%	19.6%
Interaction	14.0%	9.0%	15.8%	13.9%
Motivation	10.3%	5.3%	10.5%	9.1%
Teaching + Assessments	15.9%	2.9%	5.3%	8.0%
<b>Positive Experiences</b>	<b>Grade &lt;60</b>	<b>Grade 60-74</b>	<b>Grade &gt;75</b>	<b>All Grades</b>
Knowledge and Skills	41.9%	38.5%	30.6%	37.7%
Academic Achievement	22.6%	28.1%	38.8%	29.0%
Interaction	11.3%	19.8%	14.3%	15.9%
Study Break	19.4%	10.4%	10.2%	13.0%
Motivation	4.8%	3.1%	6.1%	4.3%

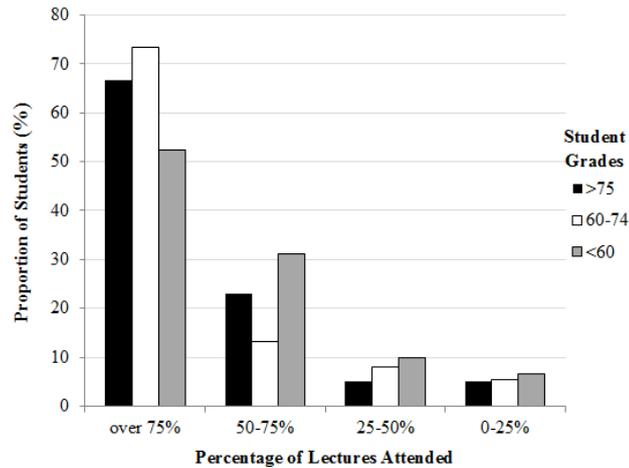
Note: The three grading categories reflect the university's cut-off scores for assigning letter grades

Students' reflections on their most positive experiences revealed a salient difference between higher and lower achieving students. The higher achieving students referred to a sense of academic achievement as their most positive experience (38.8%). This may indicate an underlying drive to succeed or achievement motivation. The lower achieving students, in contrast, mentioned breaks from study (19.4%) more often than their higher achieving classmates (10.4% and 10.2% for grades 60–74 and <75 respectively). It may be the case that a proportion of students are simply doing their best to cope with the demands of tertiary study whereas other students are focused on meeting or exceeding their academic expectations. A growing number of research studies and meta-analyses have identified conscientiousness as a significant predictor of academic achievement (Richardson & Abraham, 2009; Roberts, Lejuez, Krueger, Richards, & Hill, 2014). Conscientiousness refers to a number of interrelated attributes including effort, self-discipline, organisation, achievement motivation and persistence with difficulties or failures. Other studies have also referred to the importance of resilience, grit or mental toughness in academic success (Cassidy, 2015; Duckworth, 2007; McGeown, St.Clair-Thompson, & Clough, 2016). This non-cognitive trait may provide more explanatory power for interpreting students' academic performance than solely looking at a selected range of study behaviours.

### **Class attendance**

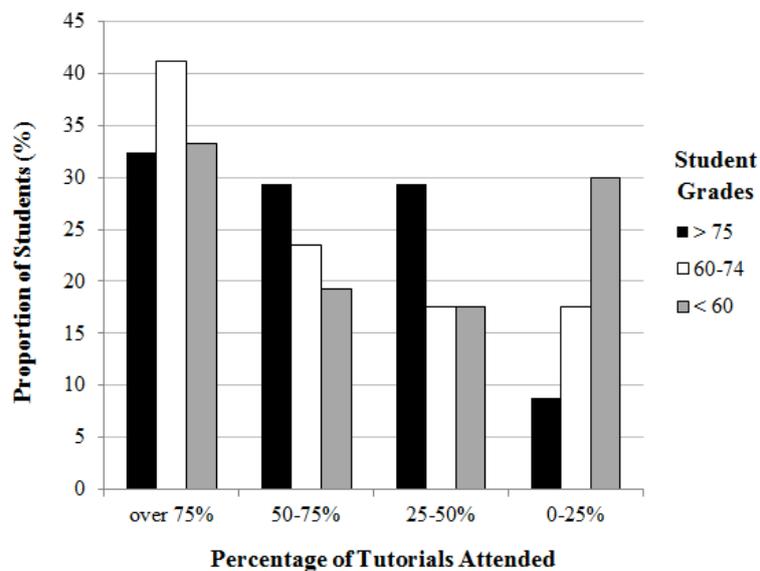
The research on classroom attendance provides strong support for its role in increasing higher student grade performance (Caviglia-Harris, 2006; Credé, Roch, & Kieszczynka, 2010, Grave, 2011). This does not suggest that a mandatory attendance policy should be put into effect (Bai & Chang, 2015), since students may be using their time to fulfil other academic and non-academic commitments. In this study, very few differences can be identified between the higher, middle, and lower achieving students with respect to their lecture attendance. Looking at Figure 2 below, the majority of students attended

over three-quarters of their lectures (see ‘over 75%’ columns). In general, little variation was exhibited across the three student grade groups.



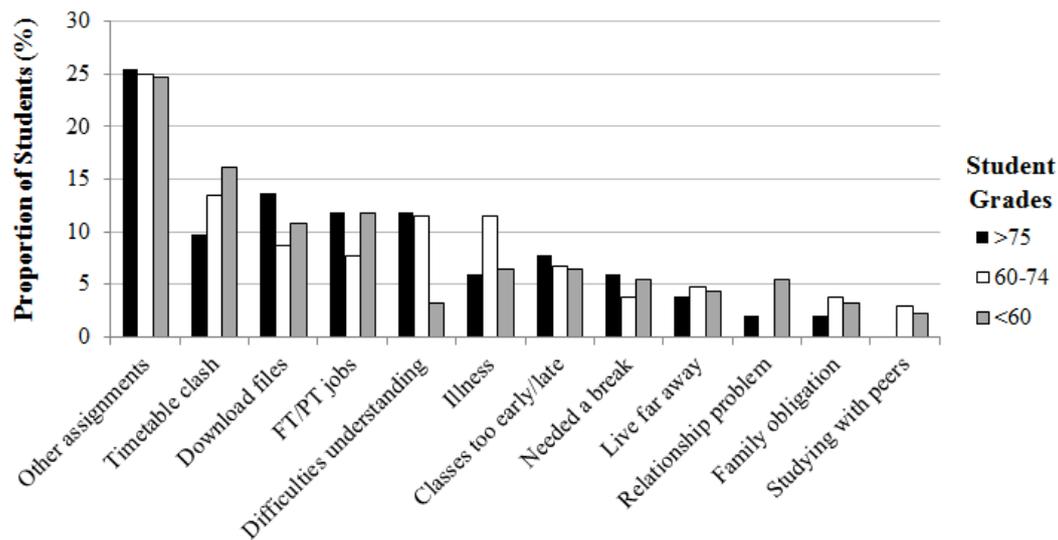
**Figure 2. Lecture attendance**

Along with the weekly lectures, students could attend tutorial sessions that were recommended but not mandatory. Classroom observations indicated that lectures were primarily focused on discussing content knowledge whereas tutorials afforded opportunities to draw connections between the lecture content and their upcoming assignments. The smaller class sizes in these tutorials enabled students to talk amongst themselves about the assignment and also ask the tutor direct questions that would address what the markers were looking for. Students reported lower attendance rates in their weekly tutorials compared to their lectures. In Figure 3 below, between 32 percent and 41 percent of students attended their tutorials, which is noticeably lower than the 52 to 73 percent attendance rates for their lectures. It is noteworthy that 30 percent of students who received a grade of less than 60 percent hardly ever turned up for their tutorials (see 0–25% column). With approximately a third of these students absent, they may have missed valuable information and strategies that would have improved their performance on their assessments.



**Figure 3. Tutorial attendance**

In addition to enquiring about students' rates of attendance, this study aimed to understand another aspect of their study behaviours, namely the reasons behind their non-attendance. Students have varying perceptions of the value of attending lectures and may therefore use other pathways to achieve their learning goals. Students reported other obligations and circumstances in lieu of attending classes (see Figure 4 below). The highest cited category, the need to work on other assignments, reflects a deadline-driven urgency to complete multiple assignments that were often due at the same time. A quarter of the students from each of the three grading groups all indicated this as their primary reason for missing classes. Various other reasons (e.g., timetable clashes, downloading files, full- or part-time employment, etc.), showed similar but lower proportions.



**Figure 4. Reasons for non-attendance.**

A minor but perhaps significant point of difference between higher and lower achieving students may be related to their need to study with others or work independently. In Figure 4 above, seemingly trivial figures are reported from the middle (i.e., 60–74—2.9%) and lower achieving (i.e., <60—2.2%) students in terms of their decision to study with their peers as an alternative to attending class. Although none of the higher achieving students reported this as a reason for their absenteeism, a few stated comments (e.g., “I learnt it myself, too easy, my time was better spent reading the textbook, preferred to read the chapters myself”) suggesting they required little assistance. Without further investigation, it is impossible to make any claims about students' preferences for studying with others or independently; however, this may suggest that particular students, especially those who are apt to underperform or drop out, may benefit from social and academic support networks (Kantanis, 2000; Ramsay, Jones, & Barker, 2007). Providing support can take various forms including teaching and curricular reforms (Beasley & Pearson, 1999; Krause, 2001; Murray & Nallaya, 2014), peer mentoring (Glaser, Hall, & Halperin, 2006), or pre-entry workshops (Peat, Dalziel, & Grant, 2000). These initiatives could identify at-risk students in need of early intervention support, who otherwise might be overlooked in post-entry language or other diagnostic measures. Fostering student engagement (Krause & Coates, 2008; Trowler, 2010), whether it be lecturer-student or student-student, may lead to improvements in students' time and information management. As students review lecture material, discuss expectations and deadlines for upcoming assignments, and compare how far ahead or behind they are, they are developing a growing awareness of what information and how much time is needed to achieve their study goals. Although independent study is a vital skill and goal for learning, team and project work skills are also essential, especially when imagining students' future workplaces beyond graduation (Lizzio & Wilson, 2004).

## Conclusion

This study has reported the findings of an investigation into tertiary students' perceptions of their study experiences and how their reflections can provide an insight into their academic outcomes. How students manage the information they receive in classes ('information management') and how they manage their study time ('time management') represented significant challenges for these tertiary students enrolled in their first-year courses. In terms of positive experiences, students mentioned the acquisition of course-specific knowledge and feeling a sense of academic achievement as highlights of their learning. Students' perceptions indirectly suggested that resilience may partially explain differences in academic performance.

Students' perceptions represent vital sources of information and insight into the diversified nature of students' learning experiences and outcomes (Lizzio, Wilson, & Simons, 2002). Surveys provide a tool for researchers to tap into these experiences. Although this study attempts to establish a link between students' retrospective comments and their academic outcomes, it would have benefitted from gathering more frequent and formative accounts to gain a better understanding of the evolving nature of their study experiences. Using ethnographic approaches (Mizrachi & Bates, 2013) or focus group interviews (Fullana, Pallisera, Colomer, Fernández Peña, & Pérez-Burriel, 2014) would provide a complementary perspective on how study behaviours are put into practice and how other factors may impact academic performance.

The findings of this study is informative at a grass roots level, enabling instructors to alter existing teaching practices that aim to improve students' time and information management. For example, the current online learning management system (Moodle) shows a scrolling list of downloadable readings, guidelines and videos. Applying a system of colour or letter coding to these online postings may scaffold their 'information management' by indicating how these resources serve targeted purposes (e.g., to deepen understanding of course concepts, assist in completing the assignments, etc.). This will help students identify which postings are relevant to their individual needs (e.g., pre-reading concepts, defining terminology for their assignment, applying concepts to practice, etc.) at particular times during the semester. Another application of this study's findings relates to the issue of the time required to read lengthy academic texts. As time management represents a significant challenge for the students in this study, tutorials could focus on teasing apart the longer or more complex texts by focusing on not only which concepts or pages are most relevant but also what is not relevant. This could be manifested in the form of reading worksheets or teacher-guided question prompts followed up with classroom discussion. By identifying less important sections the valuable commodity of time could be spent elsewhere. In summary, this investigation has elicited students' perspectives on their context-specific study needs. Circumstances beyond the students' control may make it difficult for them to see the association between their study behaviours and academic outcomes; however, with peer and institutional support, students may begin to see positive improvements in their attitudes and grades in their first year of tertiary study.

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