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Project Report

Understanding Assessment Anxiety During the Transition to University

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Ako Aotearoa™

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Executive summary

The purpose of the current research was to understand the assessment-related anxieties which first-year students in Aotearoa New Zealand may experience. The research examined students' assessment-related anxieties during their first-year coursework while also taking into consideration their previous encounters with anxiety and assessment (i.e., the concerns which individuals may bring to their university studies). Project goals were (1) to inspect students' assessment-related anxieties early in their transition to university and whether those anxieties changed over six months' time, (2) to document which classroom practices appear to exacerbate and reduce anxiety in students; and, (3) to identify ways in which students, lecturers, and the university could minimise anxiety in first-year students.

Results from this project highlight the pervasive nature of assessment-related anxieties among first-year university students in Aotearoa New Zealand. As reported, tests (82%), writing tasks (82%), and oral presentations (78.2%) elicited mild-to-extreme levels of anxiety. To a lesser degree, approximately 1 in 2 students (52%) identified group-based projects as associated with mild-to-extreme levels of anxiety. Of these types of assessments, students found oral presentations (33.5%) and tests (31.4%) the most intensely distressing. Six months later, students reported no significant change in their anxieties about tests, oral presentations, and group-work; however, students reported a significant reduction in anxieties involving written assessments. Only a small fraction of assessment-related anxieties was attributable to personality-based factors, thus suggesting that although some students are more predisposed to experiencing anxiety, the learning environment also appears to have a significant impact on the student experience.

Student interviews attributed assessment-related anxiety partially to internal factors such as poor time management, perfectionistic tendencies, and distracting circumstances outside of their coursework. External factors, such as unclear and unrealistic expectations from lecturers as well as pressure to achieve from family/whānau were frequently reported. Furthermore, insufficient experience with university-level assessments appeared to result in low academic self-efficacy, thus corresponding with high anxiety about failure. Academic and support staff acknowledged similar issues, yet they tended to lay greater emphasis on students' learning and study strategies than course- and institution-related matters.

It is recommended that transitioning students and their respective families/whānau actively seek out ways to understand what the institution expects in terms of student conduct and study practices. Since transferable skills may not always be scaffolded within each course, first-year students would benefit from taking the initiative to improve their own competencies (e.g., time management, learning and study strategies, and information-seeking behaviours). For maximum impact, such skills should be embedded and integrated within courses and programmes as opposed to stand-alone sessions and workshops. It is also recommended that academic staff ensure that they, too, have clear and realistic expectations of students. With respect to assessment, this entails particular sensitivity to prerequisite subject matter and what is expected to have been mastered in previous

educational levels (such as in high school or other tertiary courses). Academic staff who model transferable skills can have a powerful impact on students. This is helpful not only for learners who lack these competencies and/or are too nervous to ask, but also in terms of saving precious time answering individual queries. To reduce unnecessary anxiety in students, course and programme coordinators should carefully evaluate learning objectives in relation to each assessment as well as when these tasks take place across the semester/year. It is also recommended that academic staff plan in advance the amount of time each week which students should dedicate for independent study outside of lectures, tutorials, and labs for each course. Such considerations may assist with achieving a reasonable pace from the initial lecture to content mastery to evaluation and assessment.

Broadly, it is recommended that universities strive for a consistent experience in terms of what the institution expects of first-year students. Non-academic groups and teams should collaborate with academic departments so that an accurate presentation of first-year study is achieved, especially in terms of assessment and how university tasks may differ from previous schooling. It is also essential that learning support and mental health resources are readily available to assist individuals with anxiety, both to increase course performance and university retention but also for individual and institutional wellbeing.

Introduction

Decades of educational research have documented the importance of assessment for quality teaching and learning (e.g., Boud & Falchikov, 2007). Further, there has been widespread attention to the emotional states and thinking processes that accompany student assessment (Mowbray, 2012). For accurate measurement of learning to occur, an institution must consider the physical and psychological environment in which assessment takes place. Assessment conditions that create unnecessary stress and anxiety in the student are likely to produce student performance results (grades) that are at odds with their actual abilities.

Assessment anxiety refers to the set of psychological and behavioural responses that accompany worry about negative outcomes or failure under evaluative conditions (Zeidner, 2007). Most commonly assessment anxiety includes testing situations, but also includes other situations in which a learner must perform on written (Daly & Miller, 1975; Sotardi, 2018) and oral tasks (DeSouza, 2007). Assessment anxiety is relatively common in university students (Damer & Melendres, 2011; Putwain, 2008) and ways to manage this deserves attention for several reasons. At the individual level, assessment can dramatically reduce academic performance, motivation, and personal wellbeing. At the group level, it can engender a classroom (or institutional) climate of worry. Thus, assessment anxiety is not only a concern for accurate measurement of learning, but also for student (mental) health.

First-year students are particularly vulnerable to assessment anxiety, as the learning environment, expectations and stakes, and assessment practises differ greatly from high school (Pascarella & Terenzini, 2005). Although assessment anxiety is one of the most frequently researched topics in educational psychology, there are no empirical published works to our knowledge that have examined assessment anxiety in the Aotearoa New Zealand university context. Furthermore, the transition to university has rarely been addressed in the international literature for assessment anxiety. Many first-year university students in Aotearoa New Zealand report a range of concerns with regards to assessment and its related classroom practises (Sotardi & Brogt, 2016). Building on this knowledge, the current work examines the nature of assessment anxiety during the transition to university.

Research Questions

Our research included three central research questions:

1. What is the first-year student experience in terms of assessment anxiety? To what extent does assessment anxiety change over a period of 6 months?
2. Which classroom practices appear to exacerbate and reduce assessment anxiety in students?
3. In what strategic ways might individual learners and the learning environment (i.e., classroom and institutional practices) limit and manage assessment anxiety?

Literature Review

The Student Transition to University

Schooling transitions can impose abrupt environmental change on learners and are likely to elicit high levels of distress (Jackson, Pancer, Pratt, & Hunsberger, 2000; Parker, Summerfeldt, Hogan, & Majeski, 2004). Students consistently report difficulty during their transition from secondary school to university (Briggs, Clark, & Hall, 2012; Hillman, 2005; Pascarella & Terenzini, 2005). University students often encounter a variety of challenges, including social, financial, and academic pressures (e.g., Bitsika, Sharpley, & Rubenstein, 2010; Gerdes & Mallinckrodt, 1994). During this transition, individuals who are ill-prepared in adaptively confronting such challenges risk low academic achievement, reduced motivation and persistence, and increased likelihood for mental health issues.

Not unsurprisingly, this schooling transition may be anxiety-provoking for students as they face their first assessments at university (e.g., Rodgers & Tennison, 2009; Morton, Mergler, & Boman, 2014). The change in assessment regime compared to school, the anticipation of being evaluated, and the pressure and consequences of assessments are a part of life for university students. First-year students are likely to experience time-limited, invigilated examinations in addition to frequently assessed coursework. Conneely and Hughes (2010) describe university as an everyday, assessment-oriented experience for students. Indeed, students report examinations and other grade-related concerns as major sources of anxiety (Furr, Westerfield, McConnell, & Jenkins, 2001).

It should be noted that although stress and anxiety are often used interchangeably in public dialogue, they are different constructs and should be described accordingly. Generally, stress tends to be a direct response to specific demands (e.g. reading 20 pages for class by tomorrow) and is not necessarily "bad" as it can have important motivational properties. Anxiety, by contrast, is anticipatory in nature and focuses on (perceived) threats that may or may not occur in the future. In certain cases, stress which is ineffectively managed can give rise to anxiety. Sotardi (2018) recently described assessment-related anxiety as:

> A state of uneasiness which accompanies somatic indicators (emotionality) and a focus on anticipated future threat(s) to achievement and/or reputation (cognitive worry) for assessed situations in which a performance is measured, judged, and compared to a particular standard of excellence. (p. 349)

In Aotearoa New Zealand, the transition to university may contain not only the "typical" changes of first-year students but also a series of academic challenges which are unique to our national community. In particular, Aotearoa New Zealand students tend to experience a major shift in how the learning environment is structured, the nature of information that students are expected to master, and how this knowledge is assessed (Sotardi & Brogt, 2016). These differences may lead a student to feel disjointed, when academic competencies, expected to be sufficient, turn out to be insufficient to perform assessed work at an acceptable standard. Recent research (Sotardi & Friesen, 2017) showed that Aotearoa New Zealand students who cope adaptively with the academic demands during their first semester of university are those who usually demonstrate flexibility as learners and thinkers. Specifically, students who (a) recognise a need to change their own approaches to learning and studying early in their first semester; (b) identify different ways of improving their current approaches; and (c) experiment with different strategies were associated

with lower levels of academic stress and higher course performance outcomes. By contrast, students who lack flexibility and initiative as self-regulated learners risked academic underperformance (at best) and discontinuation from university study (at worst).

Many tertiary institutions are intensifying their efforts to increase retention rates for first-year students (Jansen & Suhre, 2010; Yorke & Longden, 2004). To allocate support resources effectively, it is essential that institutions have an accurate picture of the first-year student experience. Some level of student stress is certainly to be expected. However, sustained, debilitating anxiety in learners poses significant issues for universities and communities alike. University students who struggle during the transition from school to university tend to report high assessment-related anxiety as well as low academic self-efficacy (i.e., perceived capability in performing academic tasks; Bandura, 1986), and ineffective management of time and study resources (Brackney & Karabenick, 1995). In addition, it is well-known that major life events, such as the commencement of university study, are associated with increased vulnerability to psychological problems (Compas, Wagner, Slavin, & Vannatta, 1986). Educational research from the United Kingdom, for instance, reported significant decreases in students' wellbeing across their first semester of university (Bewick, Koutsopoulou, Miles, Slaa, & Barkham, 2010). Mental health problems can have a lasting negative impact on individual students' academic performance and motivation and, as such, first-year students who believe they are not good enough for university may discontinue or defer their studies (Kitzrow, 2003). Especially worrisome are the reported links between assessment-related anxiety and severe mental health issues in university students. Research in Australia, for instance, estimated that 16.3% of female university students and 25.7% of male university students had reported some degree of suicide ideation in the weeks prior to their upcoming tests and examinations (Hamilton & Schweitzer, 2000). Consequently, the university transition appears to incur both psychological and resourcing costs on individual learners, families and whānau, academic staff, and institutional student support teams.

Assessment in Aotearoa New Zealand Universities

Decades of educational research document the importance of assessment for quality teaching and learning (e.g., Boud & Falchikov, 2007). University assessments are usually designed to establish a standard of quality in which a student's work is compared to either a criterion-referenced or norm-referenced measure (Harland et al., 2014). Assessment of student work is thought to serve three purposes (Astin & Antonio, 2013). First, grades indicate the value of a particular task regarding its time demanded, level of difficulty, and importance of the topic. Second, grades offer feedback to students, so they can identify strengths and weaknesses in progressing towards improvement (i.e., formative assessment). Third, grades are accumulated and interpreted for administrative decisions within and across institutions. These decisions can determine whether or not a student passes a course, and who is awarded a scholarship or degree classification. Grade point averages (GPAs) are calculated and used to determine outcomes for employment and postgraduate study. According to Harland et al. (2014), assessment can have a negative impact on students, especially when there is tension between these three purposes. For example, formative assessment is intended to support students along their trajectories toward mastery; however, when this approach is put into practice, formative assessment may be overshadowed by the daunting, summative pressures of grades on administrative decisions.

Such tensions appear especially clear to first-year university students. For instance, most 100-level courses are designed to maximise student enrolments. Teaching staff rarely have the opportunity to provide each student with personalised feedback in these circumstances. Furthermore, some first-year students may be competing with one another to gain access into limited entry programmes. Such programmes often place a premium on grades, and therefore assessments not only represent what an individual student has (and has not yet) learned, but also how an individual has performed relative to fellow classmates. Students quickly realise that these outcomes matter, and this knowledge can add additional pressure.

In recent decades, Aotearoa New Zealand tertiary institutions have embraced dramatic changes in how student learning should be assessed. For instance, in the 1970s, Aotearoa New Zealand institutions followed international trends in steering away from a singular, summative final examination while adding formative, internal assessments which did not count towards one's grade or degree but could be used for learning purposes with the intention to improve one's final examination score (Wass et al., 2015). In the 1990s, many Aotearoa New Zealand institutions shifted toward modular structures in which each taught subject area would be associated with an internal assessment. With time, however, the formative nature of such assessments evolved into summative tasks and were eventually included as part of one's course grade. These changes—in addition to funding schemes affecting institutional operations—have led many Aotearoa New Zealand university lecturers to compete against one another for students. Such competition has accompanied increases in further summative assessments so that lecturers can ensure that students actually do the work required in each module (Wass et al., 2015). As a result of these changes, university assessments have largely become a matter of external accountability. In addition to the national changes to assessment in Aotearoa New Zealand, global practices in the evaluation of tertiary teaching and learning have also sustained rapid alterations (e.g., Altbach, Reisberg, & Rumbley, 2009). For example, recent efforts have shifted assessment towards holistic indicators, capturing not only student mastery of content knowledge but also the fulfilment of graduate outcomes or "graduate attributes" (Biggs, 2011; Spronken-Smith et al., 2013). Aotearoa New Zealand has begun to adopt these practices at the tertiary level, and these changes could lead to further assessment. Graduate attributes may also call for measures of assessment that extend beyond traditional pencil-and-paper tests.

At present, many university students in Aotearoa New Zealand are not given opportunities to learn for learning's sake. Wass et al. (2015) explain that current forms of educational assessment in Aotearoa New Zealand teach students to learn through a behaviouristic way. Unless there is a grade or reward involved, then students fail to engage with learning. Harland et al. (2014) note that this conditioning has modified student behaviour so dramatically that incidences in which university students completed work for their own intrinsic motives were uncommon. As a result, frequent grading and compartmentalisation of learning can compromise intrinsic motivation and risk-taking behaviours, factors which are essential to autonomy, critical thinking and lifelong learning in students (Wass et al., 2015). If Aotearoa New Zealand students continually self-report as fearful of being "wrong" (Harland et al., 2014), then it would also be reasonable to expect that students view assessments as a quantification of their university experience.

A summative, compartmentalised approach to assessment is not limited to the tertiary sector. Such structures mirror the practices currently used in secondary schools across Aotearoa New Zealand. Since the 2000s, the National Certificate of Educational Achievement (NCEA) qualifications structure has required secondary students to demonstrate their skills and knowledge within each subject area by completing (a) internal assessments (e.g., research projects, performances, etc.) which are assessed by teaching staff within the school, as well as (b) external assessments (e.g., summative final examination or portfolio of artistic work) which are assessed externally by the Aotearoa New Zealand Qualifications Authority (NZQA). Whereas NCEA certainly has its strengths, it also has challenges. In particular, the OECD New Zealand (Nusche et al., 2012) stated that the high-stakes approach to assessment in NCEA examinations "may have shifted the focus somewhat towards better summative assessment to the detriment of formative assessment" (p. 56). Emphasising an outcomes-based education may limit students from developing individual growth as a result of their mistakes. Indeed, researchers estimate that the majority of Aotearoa New Zealand secondary schools (60%) have not been exposed students to sufficient formative assessment (ERO 2007, p. 2), even though formative elements can differentiate effective from less effective schools (Nusche et al., 2012).

Beyond the summative structure, there are stark differences in how student learning is assessed at university compared to high school. One of the clearest differences is how student performance is measured, presented, and managed. For example, rather than awarding letter grades, percentages, or percentiles, high-school student grades in Aotearoa New Zealand fall into four different categories: Excellence, Merit, Achieved, and Not Achieved. Dunn and Stella (2012) have noted other key differences with regards to student assessment in high school and university. For instance, high-school students have the opportunity to sit more credits whereas at university, "fail is fail." High-school students can usually resubmit assignments, whereas university students typically do not have that option in their courses. At university, each individual assessed grade typically has more importance than in NCEA (which is pass or fail). Not surprisingly, high-school students expressed negative attitudes about university study because of these differences and more. For those entering tertiary study, students anticipated a similar format to high school, but were startled by the dramatic change. Students reported severe discrepancies between high school and university assessments with regards to time management and independence. Further, students explained that university assessments called for formal presentation in their work, with more strict deadlines, and that structural guidelines for essays were usually not provided. Lastly, Dunn and Stella (2012) added that beyond assessments themselves, first-year university students expected to have free time in their day-to-day lives; however, in practice, they had less time than anticipated and their study time was focused on completing assignments and tests rather than for general revision.

Thus far, we have identified some of the key characteristics representing the typical transition for first-year university students. We have described some of the contemporary practices for university assessment in Aotearoa New Zealand, flagging modular, summative assessment as a concern for students during this transition and graduate attributes as projected implications for this already complex system. We have also drawn comparisons between high-school and university assessment structures in Aotearoa New Zealand. Both systems seem to be in flux and, at times, contradictory of one another. One of the basic tenets for academic achievement during schooling transitions is continuity of practice. When there is a major disruption in what students anticipate, individuals tend

to react adversely. With a sustained neoliberal movement aimed toward ticking boxes for modular, outcomes-based teaching and learning as well as the stark differences between high school and university assessment practices, Aotearoa New Zealand students today may be more likely to struggle than previous generations during their first-year transition. This struggle may, in turn, give rise to frustration, confusion, and assessment-related anxiety.

Purpose of the Current Research

In this study, we focused on first-year university students in Aotearoa New Zealand. These students are of particular concern to educational institutions because a difficult transition can introduce serious risks to not only academic performance (Gerdes & Mallinckrodt, 1994; Pancer et al., 2000) but also mental health and personal wellbeing (Conley, Kirsch, Dickson, & Bryant, 2014; Drake, Sladek, & Doane, 2016; Filipkowski, Heron, & Smyth, 2016). Torenbeek, Jansen, and Hofman (2010) explain that the perceived "fit" between secondary school and university on the basis of contextual factors such as instructional approaches and course workload can have an impact on students during the transition. Some Aotearoa New Zealand students appear to experience such incongruence as they transition to university due to considerable dissimilarities in key educational areas, such as how learning is assessed (Vlaardingerbroek, 2006; Sotardi & Brogt, 2016). In early stages of university study, students may look to their first assessment scores as data indicating whether (or not) they are suitable to university. Indeed, educational researchers in Aotearoa New Zealand (e.g., Madjar, McKinley, Deynzer, & van der Merwe, 2010) caution that transitioning students who are left 'in the dark' (p .107) about university assessment may struggle with performance. Given various assessment-related challenges of first-year university students, understanding their experiences and influences on achievement is important for Aotearoa New Zealand students, not only in terms of performance but also in terms of wellbeing.

Methods

Overview

As noted in the introduction, our research questions in this study were:

1. What is the first-year student experience in terms of assessment anxiety? To what extent does assessment anxiety change over a period of 6 months?
2. Which classroom practices appear to exacerbate and reduce assessment anxiety in students?
3. In what strategic ways might individual learners and the learning environment (i.e., classroom and institutional practices) limit and manage assessment anxiety?

For research question 1, we used both surveys and short individual interviews with first-year students in five courses using two different assessment regimes (discussed below). Generally, we expected that first-year university students would vary in their self-reported assessment anxiety as a function of both individual differences (e.g., personality) as well as their familiarity with and readiness for university assessments. Although research has been inconsistent as to whether assessment anxiety might increase or decrease over time, we hypothesised that first-year students' assessment anxiety would reflect a small decrease over six months based on exposure effects and sampling considerations. That is, students were expected to report the greatest emotional upheaval

upon confronting their early university assessments and would therefore taper off from there as an exposure effect. Moreover, it is worth considering that students who remain at university and were available to report their second semester could would be those who were able to persevere upon their first semester and could be more likely to successfully manage the challenges of university.

For the second and third research questions, we used a combination of follow-up interviews with students and a staff survey. We did not have particular hypotheses; however, it was generally expected that students would be able to voice their concerns and would be able to communicate how institutions could better support learners during the transition to university.

To be eligible, students had to meet the following criteria: (a) must be enrolled in one of the five participating courses; (b) must be 18 years old or older; and, (c) must be in their first year of university study. Students were not offered course credit for participating.
The online questionnaire (for research question 1) was accessible immediately after students completed their first significant, summative assessment (i.e., either the invigilated test or the written essay) of their course. Students were given three weeks to complete the questionnaire.

Sample

Student participants were 239 first-year undergraduate students (74.5% female, 25.5% male) enrolled in five first-year courses at the University of Canterbury: law (*n* = 77; 32.2%), education (*n* = 75; 31.4%), chemistry (*n* = 47; 19.7%), philosophy (*n* = 22; 9.2%), and communication (*n* = 18; 7.5%). Most students enrolled in the law and chemistry courses were applying for limited entry programs of study (law and engineering, respectively). The average student age was 21.06 years (*SD* = 6.91), and median age was 18 years. Student ethnicity, consistent with categories used in the Aotearoa New Zealand census, was grouped as follows: NZ European/Pākehā (*n* = 189; 79.1%), other (*n* = 15; 6.3%), NZ Māori (*n* = 14, 5.8%), Asian (*n* = 13; 5.4%), Pacific (*n* = 5; 2.1%); and Middle Eastern/Latin American/African (*n* = 3; 1.3%). The sample was primarily domestic Aotearoa New Zealand students (96.2%). This sample includes a higher proportion of female, slightly older respondents compared to the institution's 2017 first-year student population.

Staff participants were recruited through the Heads of Department/School at the University of Canterbury. They were asked to distribute the recruiting email to staff teaching into the first-year courses. Forty-nine staff members completed the (anonymous) survey.

Instruments

Assessment Anxiety. We used the Multimodal Trait Evaluation Anxiety (MTEA-12; Sotardi, 2018) to measure individual differences in anxious assessment-related tendencies for four assessment contexts: tests, written work, oral presentations, and group work. Sample items were *"I feel anxious whenever I need to sit a test/exam"* and *"I worry that my writing is not good enough."* Responses were measured using 7-point, Likert-style scaling which ranged from 1 (Strongly Disagree) to 7 (Strongly Agree). Cronbach's alpha was $\alpha = .77$ for both the test- and writing-specific subscales, $\alpha = .84$ for the oral presentations subscale, and $\alpha = .76$ for the group work subscale.

Neuroticism. Individual differences in personality were measured using the abbreviated 10-item version of the Big-Five Inventory (BFI-10; Rammstedt & John, 2007). This instrument represents five subscales, including Neuroticism (NE), and is an ultra-short measure for non-clinical purposes. Existing research has confirmed the five BFI-10 scales as retaining a substantial portion of the reliability and validity of the original BFI-44. For this study, only students' reporting on NE is presented, which included two items: "I see myself as someone who is relaxed, handles stress well" (reversed) and "I see myself as someone who gets nervous easily." Responses were measured using a 5-point Likert-style scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Cronbach's alpha was $\alpha = .70$.

Student Interviews. Students were asked a number of questions about assessment anxiety, the types of assessment they prefer, and how they cope with assessment anxiety. The full interview protocol can be found in the appendix.

Staff Questionnaire. Staff were asked a number of questions related to their perceptions of student anxiety in assessments, and for advice to other staff and students on how to minimise student assessment anxiety. The full questionnaire can be found in the appendix.

Results

The Nature of Assessment Anxiety

Our first research question sought to understand the experience of assessment anxiety among first-year students. First, we explored anxiety through survey-based results by the initial sample of student participants (n = 239) and a six-month follow-up (n =149). Second, we explain these results in greater detail through student interviews which took place in their first semester at university. Third, we integrate open-ended, survey-based responses about assessment-related anxiety as reported by university teaching and support staff.

Quantitative results by student participants signalled both the breadth and depth of assessment-related anxiety during the transition to university. As shown in Table 1, the average student reported experiencing moderately high anxiety across tests, writing, and oral presentation assessment; by comparison, there was less anxiety reported for group tasks.

	Minimum	Maximum	Mean	Std. Deviation
1. Test Trait Anxiety	1.67	7.00	5.35	1.24
2. Writing Trait Anxiety	1.33	7.00	5.37	1.23
3. Oral Presentation Trait Anxiety	1.00	7.00	5.25	1.46
4. Group work Trait Anxiety	1.00	7.00	4.25	1.32

Table 1. Assessment trait anxiety across types of tasks using the MTEA-12 scale (Sotardi, 2018) with a scale of 1 (low) to 7 (high).

We examined non-parametric correlations between these factors and their relations to the personality trait neuroticism. As shown in Table 2, we found weak to moderate correlations were found between first-year students' different assessment-related anxieties; this adds support that anxiety could be assessment-type specific, as there may more less of an association between oral presentation and writing anxieties (r_s = .22, p < .01) than writing and tests (r_s = .41, p < .01).

	1.	2.	3.	4.	5.
1. Test Trait Anxiety	1.00	-	-	-	-
2. Writing Trait Anxiety	.41**	1.00	-	-	-
3. Oral Presentation Trait Anxiety	.34**	.22**	1.00	-	-
4. Group work Trait Anxiety	.23**	.38**	.30**	1.00	-
5. Neuroticism	.53**	.29**	.38**	.30**	1.00

Note: **p < .01 (two-tailed distribution)

Table 2. Bivariate correlations between assessment-related trait anxiety (Time 1) and neuroticism (n = 239) using Spearman's rho (r_s)

Not surprisingly, neuroticism was moderately to strongly associated with the MTEA-12 factors, indicating that students who may have a predisposition towards anxiety also more likely to report assessment-related anxiety. Our findings suggest that students enter university with anxieties about assessment, and that although personality does appear to contribute, different types of assessments may correspond to different levels of anxiety in the learning environment.

To understand this in more detail, we interviewed students about assessment anxiety. Unsurprisingly, most participants commented that university assessments were stressful. This stress particularly involved navigating students' first assessments at university when task and grading expectations were unclear or had not yet been established. For instance, a key issue stemmed from assessment requirements presented from lecturers. Several participants felt as though they were not given enough information about the assessment criteria. This was especially true for those entering university directly from high school, where there was common practice that this

information was provided in great detail. Many participants reported stress and anxiety leading up to exams, primarily because they did not know what to expect out of a university-level exam. Such concerns did not necessarily terminate upon submitting work, either. For some, anxiety was significantly reduced upon submitting assignments or finishing a test (a sense of relief) until they were about to get their results back. For others, anxiety remained high until marks were released.

Time management was another key issue contributing to assessment anxiety. Leaving things to the last minute and realizing too late that there was more to do than anticipated led to an increase in stress and anxiety levels. In contrast, students who planned their work ahead of time and had the opportunity to edit and redo parts of their assessments reported less stress than those with poor time management skills.

Different assessment types affected student anxiety as well. Public speaking dimension seemed to be quite polarizing, as many participants were highly anxious about oral presentations whereas others enjoyed it. Survey results showed that oral presentations were associated with the greatest extremes of anxiety self-report. About 1 in 3 participants (33.5%; n = 239) had reported anxiety with oral presentations on a 6 or 7 on a 7-point scale. However, students who enjoyed public speaking expressed that they rarely learn in such tasks because there was often a very low expectation for quality from the teaching staff. Interview data also showed that many students dislike group work. Several participants commented that in group tasks, they (the interviewee) ended up doing more work than everyone else in the group and they learnt nothing for themselves.

Multiple students commented that anxiety was a problem in other areas of life, which supports the idea above that individuals more susceptible to anxiety in general also report assessment-related anxieties. Furthermore, participants who expressed having perfectionist tendencies in particular tended to struggle with the transition because they found it hard to keep their work up to the standard that they had in previous schooling. Distance and mature students reported different concerns than traditional, campus-based students. For example, many reported having family and work responsibilities, and balancing work, family, and university commitments gave rise to increased stress and anxiety.

We examined students' assessment-related anxiety six months into their university study to determine whether there was significant change from early experiences. Our sample was smaller (n = 149) compared to Time 1 (n = 239), alerting the possibility that students with greater anxiety may have discontinued from university or chose not to continue with the research. However, independent samples t-tests revealed no significant differences in students' level of neuroticism (a stable trait that is not expected to vary over time) between Time 1 (T1) and Time 2 (T2) subsamples. We took those results to mean that the samples can be considered equivalent. Students, on average, reported no significant change in anxiety for invigilated tests, oral presentations and group work from T1 to T2. That is, students' global experiences with tests, presentations, and group work did not change from how they felt at the beginning of university.

Using the related-samples Wilcoxon Signed-Rank test, results confirmed a change over time in assessment-related anxiety for writing tasks. Findings revealed a statistically significant decrease from T1 (Mdn = 5.67) to T2 (Mdn = 5.33);W 3.59, $p < .001$, suggesting that writing-related anxiety

was lower after 6 months. This change could be explained by the likelihood for ample opportunities to complete written assessments in most coursework but also the adaptation from writing in high school into tertiary education. Interview data indicated that when students earned grades they viewed as "good," the outcome helped to boost their task self-efficacy and reduce their anxiety. In contrast, students who felt as though they were not so capable expressed more stress, anxiety, and was likely to influence how they felt about themselves with upcoming assessments. This implies an important feature of assessment anxiety worth exploring: with positive outcomes, exposure to a certain type of task could reduce anxiety levels in similar tasks in the future. This appears the case for this sample in terms of anxiety for written assessments. Regarding student assessment anxiety, teaching and support staff made a valuable distinction between assessment apprehension and assessment anxiety. They did not consider apprehension to necessarily be a bad thing as it can spur focus and motivation. Staff noted that, based on their experience, sources of student anxiety included poor time management and prioritization, poor writing and numeracy skills as well as perfectionism and the fear of doing something wrong. Some noted that students tend to get hung up on details of referencing, for example, rather than focus on the content of an essay.

Overall, it becomes apparent that assessment-related anxiety is a common experience in first-year students. More than 3 out of 4 participants in this sample had expressed that tests (82%), writing tasks (82%), and oral presentations (78.2%) elicited mild-to-extreme levels of anxiety. To a lesser degree, approximately 1 in 2 students (52%) had reported group work as associated with mild-to-extreme levels of anxiety. Also noteworthy were descriptive reports of anxiety on extreme anchors of the instrument (i.e., students reporting a 6 or 7 on the 7-point scale). Participants found oral presentations the most intensely distressing (33.5%), followed by tests (31.4%), writing tasks (28.5%), and group work (6.7%). Thus, the anxiety students bring to the university may influence how they perceive each assessment, prepare for specific a task, attempt to cope with the situation, and perform the task. Students and staff both commented on transferable skills as essential buffers against such anxiety, as entering university without solid time management skills may amplify the adverse experience. Notwithstanding, the origins of assessment-related anxiety are complex, without a clear pattern ranging from pre-dispositional characteristics (general anxiety disorder, social anxiety, and perfectionism) to situation-specific factors (clarity of assessments and waiting time for marks). That said, we next consider the potential catalysts for change: classroom-specific characteristics which may help (or hinder) the student experience.

Understanding Classroom Practice

Our second research question focused on identifying types of assessment tasks and pedagogical approaches which were likely to increase and decrease anxiety in students. Students' interview responses generally fell into two categories: factors that contributed to anxiety and factors that relieved anxiety. For almost every point that contributed to anxiety for one student, the opposite point relieved anxiety for another (e.g. poor time management and good time management). More items contributed to anxiety than reduced anxiety, and students expressed a diverse range of experiences.

Among course-related situations that contributed to anxiety, over half of the students expressed anxiety surrounding the theme of uncertainty and a lack of confidence in their respective courses. For example, students were uncertain about content but also what constitutes a quality answer.

There was also a theme of cognitive worry; for instance, many were worried about their ability to remember everything during an exam, practical aspects of the exam (e.g. where to go, what will happen in the exam), and particular types of assessment (e.g., not confident in taking tests or writing essays).

A number of students expressed anxiety around the importance of achieving a good grade, and several students expressed distracting personal circumstances which diverted them from their study (thus resulting in them falling behind in study which resulted in anxiety about performance). Other contributors to anxiety included external pressure (e.g., someone who had taken the course discussing how challenging it was) as well as time pressure (e.g., managing time alongside other courses). Course-related concerns among students tended to focus on referencing. Students expressed not knowing how to reference correctly and needing a lot of additional help.

Of the course-related factors that reduced anxiety, the most common was confidence in the task. A few students identified various ways of managing their stress, whether that be self-soothing strategies, seeking reassurance from someone else, time management, and group study with classmates. Having prior experience in the assessment type or university experience seemed to greatly relieve stress for students. Other factors included effective teaching, providing useful resources, low weightings of early assessments, and knowing that stress was common among classmates.

Staff encouraged students to make sure that they understand what is required of them, what the expectations of high-quality work are, and asking for clarification from the teaching staff if they are not sure. Similarly, staff encouraged students to make active use of the support services available to them, UC's Academic Skills Centre (a support unit focused on academic writing support). Staff also called on students to be proactive in and professional about their study behaviours, and identified good time management as the critical skill for students to develop. They urged students to not underestimate the amount of work necessary to do well in university studies, and that not procrastinating and keeping up with the work as students go through the semester (as opposed to last-minute work) is critical.

Staff emphasised the importance of coming to lectures and tutorials, take notes and encouraged students to work together. To prepare for tests, students could review their notes and study previous tests and exams. Staff emphasised that they are generally not out to "trick" students on tests, so tests are unlikely to contain big surprises. They noted that students could also familiarise themselves with the testing/exam conditions of the university to gain familiarity. Last, staff encouraged students to maintain a healthy and balanced life to reduce stress and anxiety, and to not link their grades to personal values (i.e. a low grade does not mean you are dumb).

Participants' Support Recommendations

Our last research question examined how individual learners and the learning environment (i.e., classroom and institutional practices) could limit and manage assessment anxiety. Student participants commented that those living in residence halls tended to receive support from Resident

Assistants and seemed to have a better idea of what was expected from them in terms of course assignments. Individuals who had a group of friends to study with (and who supported them in both social and academic areas of their lives) seemed to be less stressed and better balanced. Positive self-talk seemed to be a good strategy for students to manage their anxiety, however this action was not particularly specific.

Student participants expressed that high school teachers should prepare students better for university life, as there is not much practical overlap from high school to university in terms of assessments. Students commented that high school tends to be more hands-on and direct, whereas university is typically more hands-off and assessment details are often brushed over, therefore making it difficult for those transitioning to know what to expect at university. Not unsurprisingly, students' academic identity from high school influenced their dispositions at university. Those who performed well in high school were more confident in themselves and had higher expectations (sometimes leading to additional stress) compared to those with lower performance in high school, who appeared less motivated to complete university work, and more inclined to leave things to the last minute.

Student participants made the following observations and recommendations about their first year that they thought lecturers should be aware of (in order of frequency):

1. Lecturers need to be realistic and clear about student expectations.
2. Students need time in advance to learn, comprehend, and complete assessments.
3. Time to relax is important.
4. Students don't always feel comfortable asking questions.
5. Students enjoy self-directed and active learning tasks.
6. Students [may] have mental health issues.
7. Courses with competitive entry are stressful.
8. Lecturer enthusiasm with students makes it easier to learn.
9. Students face a lot of pressure to do well.
10. Too much information can be overwhelming for students.

Most participants expressed that lecturers should not assume that first-year students know how to perform what may be viewed as "straightforward" tasks, such as checking university email, knowing how assessments work, and navigating the course Moodle system. Students noted that they often do not have enough time to make sense of content and perform assessment tasks. This may therefore instil a mechanical, behaviouristic cycle (resulting in surface learning) rather than develop long-term, meaningful learning. For students in certain degrees, they were expressed to submit an assessment after six weeks' time, with content still being taught within the same week an assessment was due. Students also acknowledged the importance of time for wellbeing in general. In particular, many individuals commented that downtime from study is especially valuable to anxiety reduction. This appeared to be an issue both in specific courses but also across programmes of study, as students explained that courses within prescribed degree programmes seemed unaware of when other course assessments were due, thus resulting in an overload of tasks with similar deadlines. Students also expressed the need for breaks from study, especially during the mid-term breaks. Often, it was noted that assessments were assigned immediately after the mid-term break,

which essentially resulted in no downtime; rather, students needed to take their study break preparing for (and often worrying about) assessments.

Comments included the importance for lecturers to be approachable about where to seek help and around assessments. Other suggestions included: communicating well with distance learners, checking conceptual understanding throughout lectures, talking at a reasonable pace, scaffolding learning, having a variety of testing methods (i.e., exams, essays, quizzes), linking lab and lecture material, and having quick summaries at the end of lectures of key points.

Academic and support staff participants emphasised the importance of effective pedagogy to prevent students from experiencing stress and anxiety. For example, clear communication of assessment expectations, and guidelines for the assessment (e.g. format, structure, and style) were especially important. It was also important to not overload students with information, as that might increase anxiety. Staff saw a well-documented course outline, FAQs on the course website (combined with an explanation in-class on how to navigate the course website), and exemplars of assessments, responses and formats as good ways to communicate those expectations.

Staff emphasised the importance of having clear learning outcomes and constructive alignment between learning outcomes, assessments, and teaching and learning activities. They noted that they can take action in explicitly explaining the meaning of instruction verbs, such as “explain,” “compare and contrast,” so that students know what will be expected of them. Staff also commented that they should not be using assessment types that have not been taught in the course (e.g., group work or presentations). In addition, they noted they could make time in class (lecture or tutorials) to discuss revision strategies and give students the opportunity to practice exam-style questions. Staff mentioned they could provide online notes prior to the lecture, lecture recordings with meta-data, and online written feedback as well as strategies to interpret and use feedback. They also noted involving the Academic Skills Centre in courses to provide whole-class support.

Staff noted that encouraging students to form study groups, do (small) group work and discuss revision strategies among themselves can help students form a social and academic support network. Last, some staff commented on the desirability to reduce class sizes and use regular small-stake formative and summative assessments to decrease student anxiety. Staff further emphasised that university assessments are very different from NCEA. Many assessments are comprehensive, rather than compartmentalised, meaning that students need to understand the whole subject. In university, most of the assessment work will be done outside of class time, deadlines are firm, but no one will chase you to submit your assessments, and there are no re-sits like in high school. The amount of independent and autonomous learning is much higher at university than in high school, so time management, planning ahead and starting early are critical to success. Assessments are higher stakes, and often the questions are not black-and-white, with no single right way to answer them. This means that model answers do not always exist, and rote learning may not work.

Staff noted that the ability to read and follow assignment instructions is critical, so that students actually answer the question posed. They encouraged students who receive a bad mark to identify the cause, and not confuse lack of effort with lack of ability. Academic writing skills (i.e., complete sentences, spelling and grammar, logical argumentation, citing and referencing, proofreading) are

also important at university, as is the ability to show that you can think for yourself and source your own literature (i.e., don't expect the lecturer to tell you what to write). Staff also emphasised that referencing and plagiarism are important at university, and that Turnitin software is used to verify that students write their own material.

Staff urged high schoolers coming to university to take university studies seriously, and to familiarise themselves with the university grading system (A+ through E, versus Excellence-Merit-Achieve-Not Achieved). From a practical standpoint, staff encouraged students to ascertain the type of course they are in (e.g., survey course, specialist topic, skills- based, etc.) as that determines what is likely to be important on the assessments (e.g., breadth versus depth).

Staff commented that there is a lot of support available for students at university, but that might be outside of the classroom, in the student support units. Staff urged students to take up these opportunities, noting that "It is ok to ask for help," and to balance work and life to stay healthy. A last, practical piece of advice for students was simply to "back up your [digital] work." Staff noted that many students do not pick up their marked work, and thus cannot profit from the feedback. They note that receiving feedback and using it constructively is a skill that students need to learn.

In terms of the university's assessment structures, staff commented that smaller, lower-stakes assessments would be better than larger, higher-stakes ones, but also noted that departments might over assess the students. The university's current ban on allowing non-exam assessments in the exam periods has the effect of forcing non-exam assessments to be squeezed into 12 weeks of teaching time. Staff tend to observe student stress and anxiety rise at the end of the semester, as many assessments are due around the same time. Staff also commented on the NCEA system, and the need for dialogue with secondary schools regarding assessments and preparation for university. They note that NCEA is not necessarily preparing students well for university, and that NCEA Achieve is not sufficient to succeed at university-level assessments. On the other hand, they also note that they themselves should learn more about the NCEA system and structures.

Discussion and Implications

Students inevitably face challenges during the transition to university as they adapt to a new schooling system. The current research substantiates many of the findings in our previous work on student issues with assessment in the first year of university studies (Sotardi & Brogt, 2016). Specifically, the current research supports previous findings that (1) assessments represent an abrupt, unclear and substantial shift from high school to tertiary; (2) students lack transferable skills (especially with asking good questions and seeking help); (3) there are issues with the design of assessments, and (4) students experience unsupportive learning environments.

The challenges faced by students in the transition to university are naturally stressful, as any environmental shift can bring about concerns about one's competence and potential outcomes. However, when these challenges remain unresolved (often through ineffective coping strategies), challenges quickly are interpreted as threats. Anticipated threats are known to trigger the experience of anxiety. In educational settings, threats are frequently manifested in course assessments. This is often due to the short- and long-term impacts of assessments on student

performance and retention. Adding fuel to the fire, assessments may often be (erroneously) perceived by first-year students as an estimation of their intelligence, self-worth, or likelihood for a successful career. Ample literature notes the significant impact of stress and anxiety on student performance but also on wellbeing (Bewick et al., 2010). Indeed, student participants voiced many of these concerns in the current research.

Anxiety is partly a function of stable individual differences (pre-dispositional characteristics) and partly a function of situational contexts. In our study, between 8% and 28% of students' anxiety for particular assessment types could be attributable to their personality-based anxiety (neuroticism), affirming that situational characteristics are indeed important when adding to and reducing the emotional intensity in the classroom (assessment) experience. The current research indicates that neuroticism has a weaker relation to anxiety for written assessments compared to tests/exams, which adds support as to why we observed a significant reduction in anxiety for written tasks across six months' time. That is, if test anxiety is more rooted in stable pre-dispositional characteristics, it would be less likely to change over a relatively short period of time. As a result, the quality of a university's learning environment has the potential to impact student performance and wellbeing. Whereas a university cannot prevent nor treat all forms of student anxiety, it can create a learning environment which supports students and buffers against assessment-related anxiety.

Based on the current research, staff can assist university students by reiterating that the transition from high school is challenging, and that stress and a lack of confidence are common. Students should know that they are not alone in the challenges they face, and that they can learn to adapt and cope by developing effective strategies in terms of learning, such as study practices and help-seeking behaviours. Lecturers can also assist by taking the time to review their course assessment structure in a way that builds students' confidence, makes the expectations and priorities for students clear, guides them into thinking about how to approach the assignment, and informs students about the university support structures available to them. Lecturers could also familiarise themselves with NCEA, and make explicit distinctions between NCEA-type assessments and university assessments. Further, lecturers can encourage and model help-seeking behaviours. This is both to develop independence as a self-regulated learner but also to ensure that students--especially those from cultures where a power distance between teachers and students is large--do not worry that it might be inappropriate to "bother the teacher with my ignorance." In such circumstances, one way to model the art of asking questions from students is for the lecturer to pose questions to one's self while teaching (e.g., "You might be wondering, 'How should I approach this task?'"). Such activities have the potential to scaffold the types of kinds of questions students might now recognise as appropriate, to find answers to questions they might already have (but don't yet feel comfortable asking), and to encourage questions in the future.

In the current research, we specifically showed differences in anxiety based on the type of assessment. This is not to imply that certain assessments are better than others, nor that some assessments should be avoided. As noted by some of the lecturers and support staff, stress can be useful preparation for life. For example, in almost any job there will be elements of group work and/or oral presentations. Moreover, particular assessments types, while stressful to students, are pedagogically appropriate to determine to what degree the student has met the learning objectives of the course. It is our current view that educational institutions share a responsibility in helping

first-year students develop effective strategies to manage stress with assessments. Course-specific and institution-wide support systems must be put in place and monitored for their effectiveness not only for coursework performance and retention purposes, but also for wellbeing and career success.

One factor influencing student assessment stress is their level of familiarity with the assessment type. Unfamiliar assessment types can add to anxiety, as it is not necessarily clear to students how they can perform well. Another factor influencing assessment anxiety is its locus of control. In particular, external forces which shape outcomes (such as other students' contributions in group work assessments) can be especially daunting for individuals who are concerned about their coursework and performance. This factor would appear particularly important in programmes where students are competing with one another for limited entry in subsequent years. This implies that clear expectations of group work and oral presentations need to be set by the teaching staff to ameliorate this stress and to help students focus on the task itself, rather than the task structure. It also implies that the assessment needs to be scaffolded, so that students develop skills required for the assessment (e.g., how do prepare and deliver a presentation) and have opportunities to practice the task beforehand. One approach is through the inclusion of supplementary activities where students can develop important transferable skills while embedded within their discipline or programme of study (e.g., see Mitrovic, Mathews, Dimitrova, Lau & Weerasinghe, 2017).

Both staff and students agree that clarity of the assessment task is key to reducing anxiety. However, it appears that clarity from the perspective of the lecturer, and what is important, can be different from the perspective of the students. For example, students focus on academic referencing in an essay assessment, which is a novel task for them. While each referencing system has a clear set of (rather mechanical) rules, meaning it is relatively easy to "get right," a confound arises because courses may use different referencing systems. For lecturers, the referencing is important, but more in the sense of avoiding plagiarism, with typically relatively few marks assigned to the formatting of the references. The bulk of an essay assessment's marks will be allocated to the essay itself, the strength of the argument and the structure of the reasoning. Again, it becomes important for the lecturer to clearly signal to the students where the bulk of students' energy should be dedicated.

Assessment anxiety also appears to have a logistical cause. In a "semesterised" tertiary institution, many courses have major assessment items due around the same time. This creates a significant cognitive and emotional load on students. In more structured programmes, where all students take the same courses, assessment load management is relatively easy to achieve by the teaching staff, although assessment timing may not be optimal for a course with regards to measuring its learning objectives. In less structured programmes, where students have considerable freedom in creating their programme of study, assessment load management becomes almost impossible to achieve. However, some things can be done. At the University of Canterbury, we recently started a project looking at historical data of (large) courses commonly taken together in the same semester (not necessarily part of the same programme or degree) and inform the course coordinators so they may try to manage the student assessment load. This project is still in the early stages.

With the university sector under pressure to increase its international (full-fee paying) student numbers, and a staff profile that is already quite international (at the University of Canterbury, about half the staff are from overseas), there is ample room for miscommunication in the transition

from high school to university. Institutions will need to prepare for, and have the support structures in place to deal with an increase in student support needs, in particular in the first year of study. This will require investment of resources in student support, something international students can reasonably expect for the high fees they are paying. Staff development efforts should also focus on helping new staff adapt to the Aotearoa New Zealand educational (student) culture, and ensure that staff set appropriate academic expectations.

Concluding Remarks

This work has reinforced the notion that the transition from high school to university is a challenging one, in this particular case the transition to a new assessment regime. To facilitate the assessment transition, and to ensure that assessments are actually measuring student performance accurately, university staff and processes first need to be aware of the particular challenges the students are facing. Universities like UC, where a high fraction of the teaching staff is from overseas, awareness of the assessment regime the students are coming from is key. To this end, the student voice is critical, as they are in the best position to judge the differences between the different regimes. Other key stakeholders to engage would be secondary school teachers and university staff from areas like Teacher Education and the support services (the latter were the participants/informants of Sotardi & Brogt, 2016). Not all concerns raised by these stakeholders can (or sometimes should) be ameliorated from the university's view, but it is important to understand the experience students have so that appropriate actions can be taken to prepare students for university success. Fine lines exist between approaches to supporting students in terms of stress and anxiety. Shielding students from the transition by maintaining assessment practices that mimic high school may delay the transition and lead to a false sense of self-efficacy of doing university-level work. On the other extreme, too many novel types of assessment may overwhelm students, induce anxiety and reduce the validity of the assessment task. Ideally, new types of assessment should be scaffolded and student supported in the transition, and set at the appropriate challenge level. Ultimately, assessment practices should be grounded in constructive alignment with learning objectives and sound pedagogical justifications. Balancing an assessment portfolio for all courses students take is far from trivial except in the (professional/externally accredited) degrees that use a cohort structure (e.g., Engineering and Education, and to a lesser degree Commerce and Law). For most programmes of study, the numerous pathways of study make effective assessment management at the programme level near impossible, because students can take numerous elective courses. Some work in this area has recently started at the University of Canterbury, and it is hoped that this will improve the student experience, reduce assessment bunching and assessment anxiety, and create a more flexible timetable.

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