Undergraduate Student Course Engagement of an Ethnically Diverse Population in Auckland, New Zealand

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Received: August 3, 2020 Accepted: November 9, 2020 Online Published: December 20, 2020

doi:10.5430/wje.v10n6p74 URL: https://doi.org/10.5430/wje.v10n6p74

Abstract

Increasing student engagement leads to improved educational outcomes, promotes positive student experiences, and reduces attrition rates. In Aotearoa (New Zealand), Māori students now account for 20% of university enrolments, but first-year attrition rates are approximately 17%. Both Māori and Pasifika students are more likely to drop-out during their first year of study than Pākehā students. To address the question *Are Māori and Pasifika students less engaged than Pākehā students when studying in their first year of university?* we measured student engagement during a compulsory first-year course delivered by a university in Tāmaki Makaurau (Auckland). Questions were from the National Survey of Student Engagement, and students identified their ethnicity as either Māori, Pākehā, Pasifika, or Other. Information on the campus of study was also collected. Three scales within the questionnaire were (1) Cooperative Learning, (2) Cognitive Development, and (3) Personal Skills, and both total score, and score for each scale, were compared between ethnicities and across campuses. Total engagement for Māori students was higher than all other ethnicities on all campuses, and at the South Auckland Campus, Māori students scored higher in Cooperative Learning than all other ethnicities. These encouraging scores for Māori students reflect a commitment of inclusion and support for Māori enrolled at this large tertiary education provider in Tāmaki Makaurau, Aotearoa. The questionnaire was convenient to use and scales showed good internal consistency. We suggest that regular measures of student course engagement are made so trends can be shown for all student groups enrolled at universities throughout Aotearoa.

Keywords: engagement, undergraduate māori, exploratory principal component analysis

1. Introduction

1.1 Background

Large first-year introductory courses at university have left students feeling lost and isolated, and these courses have required novel approaches to encourage student engagement (Cuseo 2007; Higgins-Opitz and Tufts, 2014). Universities have benefited from extensive research on improving the educational experience of first-year students (Biggs and Tang 2011; Zeegers, Deller-Evans, Egege and Klinger 2008), and strategies which encouraged and nurtured engagement were more likely to have had a positive effect on a student's first-year experience (Kift and Nelson 2005; Kift, Nelson and Clarke 2010; Nelson, Smith, and Clarke 2012). Increased engagement has not only improved overall experience, but also led to improved educational outcomes and increased the likelihood of completing a qualification. Positive student-staff interaction was a key to addressing disengagement (ACER 2010), and it has been suggested that university students in Aotearoa reported less meaningful interaction with staff than their Australian counterparts, who in-turn, were less likely to engage in every type of staff interaction than their American counterparts.

1.2 Theoretical Framework

A straightforward definition of student engagement may seem appealing, but its conceptual complexity may render such a definition as a broad metaphor for good teaching which enables student learning. Engagement has become an all-encompassing construct riddled with ambiguity and fuzziness, yet despite this, using questionnaires to gauge student engagement remains an approach which can lead to actionable findings. Questionnaires such as the National Survey of Student Engagement (NSSE), the Australasian Survey of Student Engagement (AUSSE), and the College

Student Experiences Questionnaire (CSEQ) have been used to measure student engagement with tertiary education providers – these metrics are increasingly viewed as an indicator of institutional performance. Questionnaires are usually structured to contain the different components of engagement, and these components have been identified and affirmed using appropriate statistical analyses such as exploratory factor analysis and confirmatory factor analysis (Krause & Coates, 2008). However, this approach which disaggregates the components of engagement can potentially detract from understanding student engagement as a multidimensional construct. For example, questionnaires which focus predominantly on the behavioural component of engagement may not capture the multidimensional nature of student engagement (Zepke, 2018). Questionnaires which measure student engagement with a course (where a course is a discrete, clearly defined unit of study) rather than an institution, are popular (Ahlfeldt et al., 2005; Krause & Coates, 2008). Afterall, it is the course which provides a conduit for interaction between academic staff and the student, and positive interactions between faculty and students are likely to increase student engagement (Cuseo, 2007; Hausmann et al., 2007). Also, it is within a course that a collection of discrete learning objectives may be described, the passing of which may provide pre-requisites to progress into higher levels of study.

1.3 A New Zealand (Aotearoa) Perspective

Aotearoa's diverse population represents the unique fusion of indigenous peoples (Māori), colonisation by European settlers (Pākehā), and more recently, immigration from both Pacific Island nations (Pasifika) and from Asian countries. Aotearoa now has a total population of approximately 4.9 million, with about 1.7 million living in Tāmaki Makaurau (NZ Stats 2019). The Māori population of Tāmaki Makaurau is increasing, and more Māori live in Tāmaki Makaurau than in any other region in Aotearoa. In the 2013 Census, 163,920 people in Tāmaki Makaurau identified as being of Māori descent, this being approximately 25% of all Māori in Aotearoa, and 12% of the population of Tāmaki Makaurau (Auckland Plan 2050 2019b). The city's Pasifika population is mostly New Zealand-born, and it is predicted that the number of Pasifika in Tāmaki Makaurau could increase from 15% in 2013 to 17% by 2038 (Auckland Plan 2050 2019a). For the first time, between 2006 and 2013, growth of the Pasifika population in Tāmaki Makaurau was through natural increase rather than migration from the Pacific Island nations. Almost 25% of Tāmaki Makaurau residents identified with an Asian ethnicity, and Tāmaki Makaurau was home to 65% of all Asian peoples residing in Aotearoa. Within Aotearoa, the term "Asian" is inclusive of peoples from the Indian sub-continent, Far-East nations, China, and people originating from countries on the western border of the Pacific Ocean. This broad Asian ethnic group is projected to increase significantly from both immigration and natural growth.

Measures of tertiary student engagement in this diverse population have previously been studied nationwide (Leach 2013), and this diversity has also been the focus of a recent investigation into student engagement in a large cohort introductory course at a New Zealand University (Brown, Power, Bowmar and Foster 2018). The current study focuses on tertiary student engagement in the largest tertiary education provider in Tāmaki Makaurau, with campus locations in the central city, North Shore City, and Manukau. As stated by the Tertiary Education Commission (TEC), improving the transition, participation and achievement rates in tertiary education for Māori and Pacific learners in South Auckland is essential for the economic and social well-being of both South Auckland and Aotearoa (TEC 2018a; TEC 2018b). Though not an official place name, the term South Auckland has come into common use in Aotearoa and is an imprecisely defined urban area of Tāmaki Makaurau. The geographical area of South Auckland is served by Counties Manukau District Health Board, which is within the territorial authority of Tāmaki Makaurau city council. South Auckland has proportionally more people in the most deprived section of the national population and fewer in the less deprived section of the national population (MoH 2018; MoH 2019). As stated by the TEC, establishing stronger pathways from secondary school into tertiary education may ensure that study opportunities are available to all learners in South Auckland, thus empowering Māori and Pacific students to make informed decisions about their tertiary education choices.

The two main providers of tertiary study in South Auckland are Auckland University of Technology (AUT) and Manukau Institute of Technology (MIT). AUT and MIT have first-year retention rates of 80% and 79% for degree-level full-time students and qualification completion rates of 67% and 66%, respectively (TEC 2018c). Both institutions are committed to increasing the participation and retention of Māori and Pacific learners, and actively promote the inclusion of these ethnicities in their prospectuses. The AUT Strategic plan 2012-2016 states that advancing educational opportunities and success in the diverse communities of Tāmaki Makaurau and Aotearoa is a priority, and that AUT will expand the participation and success of Māori and Pacific people across disciplines and levels of qualification. At AUT, course completions improved for Māori students between 2015 and 2016, but although the 2016 South Campus course completion rate improved, it remained below that for both the City Campus and the North Campus (AUT 2016). The number of Māori students successfully completing courses at the South

Campus has been on an upward trend since 2013, and in 2016, this rate improved further to 81% (75% in 2015, and 68% in 2013).

1.4 Study Aims

The current study measured student engagement with a large cohort, first-year undergraduate course, at the larger of these two institutions (AUT). Ethnic diversity in Tāmaki Makaurau is reflected in student enrolments in the city's universities, and the AUT South Campus student population diversity is indicative of the resident population of South Auckland. This diversity is important for student development because being introduced to diverse people, new ideas and fresh perspectives can challenge previously held ideas and experiences. Students who engage with this diversity and with their courses become more open to a variety of social challenges and are more effective within complex occupational environments (AUT 2012). Engaged students develop higher levels of critical and active thinking skills, experience enhanced classroom discussions, and develop a greater ability to understand diverse perspectives. Therefore, measuring course engagement in the diverse undergraduate population at AUT, and identifying potential differences in course engagement between ethnicities, remains current.

The aims of the current study were:

1. Explore the internal structure (sub-scales) of an engagement questionnaire using data collected from a large undergraduate course in Human anatomy and physiology, delivered at a publicly funded university in Aotearoa.
2. Compare engagement scores between ethnicities consistent with the ethnic diversity of Tāmaki Makaurau, NZ.

2. Method

2.1 Setting

This research was carried out a large publicly funded university in New Zealand. This institution has locations in the central business district of Tāmaki Makaurau (City Campus), Akoranga (North Campus), and in Manukau (South Campus). For this study, data referred to as "all Campuses" are combined results from all three locations, and data referred to as "South Campus" are only from results of students who identified their main location of study as Manukau. At this university, students who enrolled into a health science programme were required, on entry, to complete a 12-week first semester consisting of four equally weighted courses. These courses were (1) Health and the environment, (2) Lifespan development and communication, (3) Human anatomy and physiology, and (4) Knowledge, communication, and enquiry. In the current study, data were collected between weeks 8 and 12 of the Human anatomy and physiology course. This time-point avoided early student withdrawal (which could occur in the first 3 weeks of the course without a financial penalty) and the mid-semester exam which occurred in week 6. Also, it was assumed that students persisting with the course in week 8 and onwards would likely finish the course. The language of instruction on the course was English, and all questionnaires were in English. The study had institutional ethical approval (AUTEC 15/23 "*Student engagement in the first year of an undergraduate education"),* but personal demographics (for example, age and gender) and any data that could be used to identify an individual student, were not collected.

2.2 Instrument

The 15-item questionnaire (see Appendix A) was made available to students at the start of week 8 and remained available until the end of the course (week 12). The questionnaire was administered using an online, secure website hosted by Qualtrics. Each student received a personalized link using an online course management system (Blackboard) which identified the campus where the student was enrolled, and the link could only be opened once by that student. The questions were asked in a randomised order, and the instrument included 14 items from the National Study of Student Engagement (Kuh 2001), which have been previously used in a study of student engagement (Ahlfeldt, Mehta and Sellnow 2005). The analysis of questionnaires which measure student engagement have been reviewed elsewhere (Krause and Coates 2008), and a previous report from a different university in Aotearoa (Leach 2016) includes a literature review of other instruments to measure student engagement. A further question was added which asked the student to identify their ethnicity as either Māori, Pākehā, Pasifika, or Other. Responses to the 14 items were rated on a Likert scale from 5 to 1, where 5 indicated the most positive response (for example, 'Always', 'Strongly agree', and 'A Great Deal'), and 1 indicated the most negative response (for example, 'Never', 'Strongly Disagree', and 'None at all').

2.3 Statistical Analysis

All statistical analyses were performed using an appropriate statistics package (IBM SPSS Statistics, version 25). Exploratory principal component analysis was carried out on the data obtained from all completed questionnaires. The internal structure of all data was assessed using principal components with the varimax rotation method. Internal consistencies of combined items which loaded onto each identified component were estimated using Cronbach's alpha (α). Scores for each component were compared with a one-way analysis of variance test with Bonferroni post-hoc tests where the initial test was significant ($P<0.05$). These comparisons were made between ethnicities (Māori, Pākehā, Pasifika, Other) for the combined data collected for all campuses, and for data collected by students enrolled on the South Campus only.

3. Results

Complete engagement questionnaires were received from 713 participants including 144 from students enrolled on the South Campus. Few responses were from students enrolled on the City Campus while most responses were from students enrolled at the North Campus (n=557).

3.1 Principal Component Analysis

Initially, a Kaiser-Meyer-Olkin test was used to assess the appropriateness of using factor analysis on the data, and this analysis returned a test statistic of 0.904 which indicated that the data were suitable for factor analyses. The chosen method for factor analysis was the exploratory principal component method with varimax rotation as this approach was consistent with previous analyses (Brown, Bowmar, White and Power 2017; Brown, White, Bowmar and Power 2017). Using the factor retention criteria of Eigenvalues greater than 1, the analysis identified three components which cumulatively explained 54.4% of the total variance (for a review of factor retention decisions in exploratory factor analyses, see Hayton, Allen and Scarpello (2004)). The *"Eigenvalues-greater-than-one rule"* is a commonly used measure to identify the number of components in factor analyses. A component with an Eigenvalue of 1 (or greater) will account for as much variance as a single variable, and therefore, the only components that explain at least the same amount of variance as a single variable are retained.

The three principal components identified in the questionnaire were consistent with the original iteration of the engagement questionnaire (Ahlfeldt, Mehta and Sellnow 2005), and consistent with more its more recent applications (Hopper 2016; Hopper and Kaiser 2018). The first component contained five questions and has been described as "*Personal Skills*"; the second component also contained five questions and has been described as "*Cognitive Development*"; and the third component contained four questions and has been described as "*Cooperative Learning*". These descriptors were originally proposed by Ahfeldt et al. (2005) when validating the original version of the questionnaire. The questions which comprised these 3 principal components and the corresponding loading values for these questions are shown in table 1.

The reliability of the components was assessed using the Cronbach's alpha statistic (a). Cronbach's alpha is commonly used to measure the reliability of a set of questions making up a component within a larger questionnaire. Values of Cronbach's alpha above 0.7 (the maximum value is 1) represent acceptable reliability of the questions, indicating that each individual question in a component is asking something about the same thing. In the current study, values of 0.81, 0.71, and 0.70, were calculated for components 1, 2, and 3, respectively.

Table 1. Item Loading Scores and Reliability Coefficients (α) for 3 Components Identified with Exploratory Principal Component Analysis. Items with loading scores <0.5 are omitted

Questionnaire Item	component		
	1 (α=0.81)	2 (α=0.71)	3 (α=0.70)
Q11. To what extent do you agree with the statement: "The HAP 1 course has taught me to write clearly, accurately, and effectively."	.814		
Q8. To what extent has the HAP 1 course allowed you to evaluate the accuracy of information and allowed you to draw your own conclusions about the information?	.755		
Q12. To what extent do you agree with the statement: "The HAP 1 course has taught me to think critically and analytically."	.743		
Q7. To what extent has the HAP 1 course allowed you to synthesize ideas and information to form new, more complicated interpretations?	.599		
Q9. To what extent has the HAP 1 course emphasized the application of information or concepts to practical problems or new situations?	.531		
Q2. During your HAP 1 classes, about how often have you worked with other students during class time?		.732	
Q3. While studying HAP 1, about how often have you worked with classmates outside of class time?		.707	
Q4. While studying HAP 1, about how often have you tutored or taught class materials to other students in the class?		.684	
Q1. During your HAP 1 classes, about how often have you asked questions or contributed to class discussions?		.660	
Q14. To what extent do you agree with the statement: "The HAP 1 course has taught me to learn effectively with other individuals."		.502	
Q13. To what extent do you agree with the statement: "The HAP 1 course has taught me to learn effectively on my own."			.708
Q5. To what extent has the HAP 1 course emphasized the memorizing of facts and ideas so that you can repeat them in the same form?			.689
Q10. To what extent do you agree with the statement: "The HAP 1 course has contributed to me acquiring job-related or career-related knowledge and skills."			.599
Q6. To what extent has the HAP 1 course emphasized the analysing of the basic elements of an idea?			.472

3.2 Engagement Scores

Mean engagement scores for each of the identified components, and the mean total engagement score are reported in Table 2. The total engagement score for Māori students was higher than all other ethnicities on all campuses. Also, the total engagement score for Māori students was higher on the South Campus when compared to all other ethnicities. On the South Campus, Māori students scored higher in the Cooperative Learning component than all other ethnicities.

Table 2. Mean Engagement Scores for Ethnicities for All Campuses and the South Campus

	All Campuses				AUT South Campus			
	Māori (n=52)	Pasifika (n=102)	Pākehā (n=280)	Other (n=279)	Māori (n=27)	Pasifika (n=23)	Pākehā (n=48)	Other (n=46)
Cooperative Learning	15.3	13.6	13.5	11.9	16.4***	13.4	13.6	12.4
Cognitive Development	14.0	13.0	13.2	12.0	14.4**	12.5	13.1	11.8
Personal Skills	13.6	11.8	12.5	11.2	13.1*	11.3	12.4	10.3
Total Engagement Score	42.9***	38.4	39.2	35.1	43.9***	37.2	39.1	34.5

*** Significantly higher compared to Pasifika, Pākehā, and Other (P<0.01, one-way ANOVA , Bonferroni post -hoc).

** Significantly higher compared to Other (P<0.03, one-way ANOVA with Bonferroni post -hoc).

* Significantly higher compared to Other (P<0.05, one-way ANOVA with Bonferroni post -hoc).

4. Discussion

This study reports that levels of course engagement of Māori students was higher than other ethnicities, and one can speculate that the ethnicity-specific support offered to Māori students on the AUT South Campus was partly responsible for this. Numerous initiatives have contributed to increased engagement at AUT but most lack any empirical evidence to support their effectiveness. For example, throughout the university, te Reo Māori is promoted in concert with English, and te Wiki o te Reo Māori is fully and openly supported on all campuses. However, the large cohort, introductory courses taught in the first semester are not taught in te Reo, and all course documentation (course descriptions, lecture notes, etc.) is only provided in English. One can speculate that some initiatives may have directly influenced student engagement as measured in this study – for example, on the introductory Human anatomy and physiology course, student led peer-to-peer support received internal funding for two semesters at the South Campus. Also, on the South Campus, discipline-specific student support was offered to first year students in the Bachelor of Sport and Recreation degree (a popular choice for Māori students), again funded internally. Furthermore, AUT has initiated community engagement in South Auckland from the South Campus and delivered specific, targeted recruitment of both Māori and Pasifika students to study academic programmes offered on the South Campus.

Previous reports from a different tertiary education provider in Aotearoa reported the successes achieved regarding Māori student engagement (Leach 2013; Leach 2016), and the current study adds further evidence to support the improved level of engagement of Māori students in Aotearoa. Although the engagement of Māori students will differ between universities in Aotearoa, the level of ethnicity-specific support given by each university is likely to influence Māori student satisfaction and retention (van der Meer 2012). In the current study, when all data were compared from across all campuses, students identifying as Māori had the highest total engagement score, and on the AUT South Campus, both total engagement score and all sub-scale engagement scores were higher for Māori students. Higher Māori student course engagement is a very positive finding because it has been suggested that a lack of engagement reduces student self-efficacy, and that Māori students who reported reduced engagement had a lower sense of academic control and were likely to experience low academic enjoyment (Gavala and Flett 2005). Data from the current study may suggest that higher Māori student course engagement has potentially contributed to improving course completion. Further, this elevated course engagement likely contributed positively to the overall student experience for Māori – this has the potential to be financially rewarding for the University because performance-linked funding in Aotearoa uses metrics such as retention and completion rates of Māori students (MoE 2014).

Increasing engagement in the first year at university may promote the successful transition to higher education (Nelson, Smith and Clarke 2012), and this is particularly relevant to students traditionally under-represented in higher education, and students who have ill-formed expectations of what to expect as they transition into higher education (Kift 2016). In recent years, substantial increases in both Māori and Pasifika enrolment in higher education has occurred in Aotearoa (Durie 2009), and Māori students account for approximately 20% of domestic tertiary students (Wensvoort 2013). Nationally, first-year attrition rates are approximately 17% in Aotearoa but remain stubbornly higher among Māori and Pasifika students (MoE 2014). Disparities in tertiary education indicate that Māori and Pasifika students were more likely to drop out during their first year of tertiary study and were less likely

to complete their qualification than their Pākehā peers. This may suggest that Māori and Pasifika students were less engaged than their fellow Pākehā students, however, data presented in the current study indicated that higher engagement in Māori students is occurring at AUT South Campus and that it may be possible to tackle these disparities.

In the current study, sub-scales within the questionnaire showed good internal consistency (α values ≥ 0.7), however, in the original iteration (Ahlfeldt, Mehta and Sellnow 2005) only an overall value of 0.84 was reported. Values for sub-scale internal consistency reported by others (Hopper 2016) were low, ranging from 0.51 to 0.66, with a higher value reported for the instrument in its entirety (0.74), whereas respondents' values for each sub-scale have been reported without a corresponding value for scale internal consistency (Hopper and Kaiser 2018). Another instrument used to measure first-year student engagement reported seven sub-scales, all with internal consistency values ranging from 0.67 to 0.86 (Hopper and Kaiser 2018), while a further instrument focussing on course engagement reported four sub-scales with internal consistency values ranging from 0.77 to 0.83 (Brown, Bowmar, White and Power 2017). It is likely that student demographics and study sample size are but two factors that influence measures of sub-scale internal consistency, therefore the consistency of the sub-scales reported in the current study demonstrate that some confidence can be ascribed to reporting their results. The engagement questionnaire employed in the current study used items which originated from the National Survey of Student Engagement (Kuh 2001) and recycled in a shorter version for use in the classroom (Ahlfeldt, Mehta and Sellnow 2005) – the shortened instrument has advantages over the full version in that it was reported to focus on three components of engagement (collaborative learning; cognitive development; personal skills), all of which can be directly influenced by faculty members who contribute to student teaching and learning. Positive interaction between academic faculty and students is likely to increase student engagement (Cuseo 2007; Hausmann, Schofield and Woods 2007), and it has been suggested that faculty need to be empowered to asses student engagement in their classrooms (Hopper 2016). Also, students have reported that interaction with academic faculty were both encouraging and motivational, thus contributing positively to a sense of belonging (Brown, Power, Bowmar and Foster 2018; Ross 2008).

4.1 Concluding Remarks

In conclusion, this study presents encouraging course engagement scores for Māori students enrolled at a large tertiary education provider in Tāmaki Makaurau, Aotearoa. Further, the instrument used to measure course engagement was straightforward to administer and the data for sub-scales within the instrument showed good internal consistency. A recommendation from this study is that more regular measures of student course engagement are made such that temporal trends can be shown for all student groups enrolled at university.

Acknowledgements

Considerable thanks to all participating students. The author gratefully acknowledges the funding provided by the Faculty of Health and Environment for payment of publication fees.

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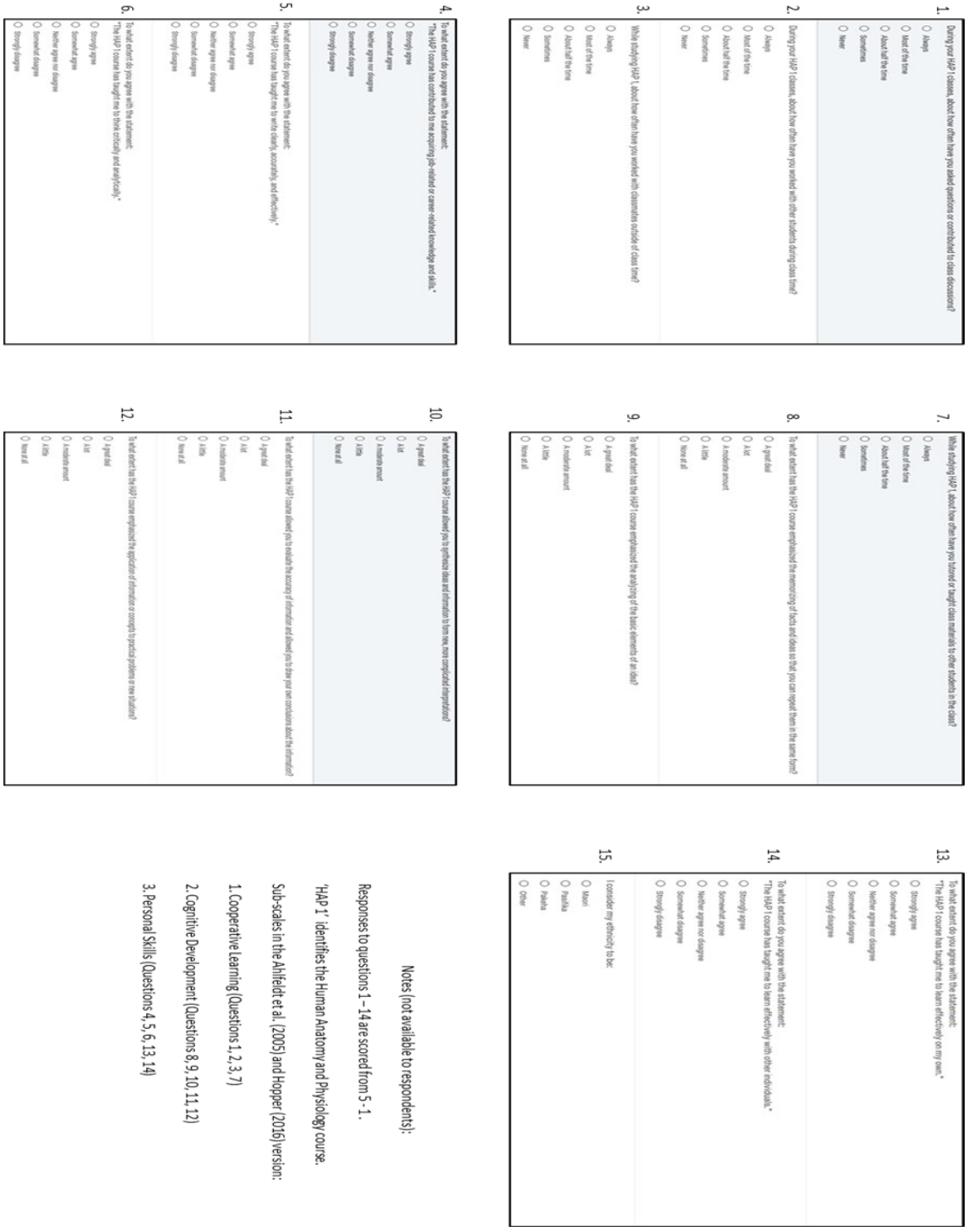
Appendix A

Student course engagement questionnaire (modified from Ahlfeldt et al., 2005).


1. During your HAP 1 classes, about how often have you asked questions or contributed to class discussions?
○ Always ○ Most of the time ○ About half the time ○ Sometimes ○ Never

2. During your HAP 1 classes, about how often have you worked with other students during class time?
○ Always ○ Most of the time ○ About half the time ○ Sometimes ○ Never

3. While studying HAP 1, about how often have you worked with classmates outside of class time?
○ Always ○ Most of the time ○ About half the time ○ Sometimes ○ Never

4. To what extent do you agree with the statement:
"The HAP 1 course has contributed to me acquiring job-related or career-related knowledge and skills."
○ Strongly agree ○ Somewhat agree ○ Neither agree nor disagree ○ Somewhat disagree ○ Strongly disagree

5. To what extent do you agree with the statement:
"The HAP 1 course has taught me to write clearly, accurately, and effectively."
○ Strongly agree ○ Somewhat agree ○ Neither agree nor disagree ○ Somewhat disagree ○ Strongly disagree

6. To what extent do you agree with the statement:
"The HAP 1 course has taught me to think critically and analytically."
○ Strongly agree ○ Somewhat agree ○ Neither agree nor disagree ○ Somewhat disagree ○ Strongly disagree

7. While studying HAP 1, about how often have you listened or taught class materials to other students in the class?
○ Always ○ Most of the time ○ About half the time ○ Sometimes ○ Never

8. To what extent has this HAP 1 course emphasized the memorizing of facts and ideas so that you can repeat them in the same form?
○ A great deal ○ A lot ○ A moderate amount ○ A little ○ None at all

9. To what extent has this HAP 1 course emphasized the analyzing of the basic elements of an idea?
○ A great deal ○ A lot ○ A moderate amount ○ A little ○ None at all

10. To what extent has the HAP 1 course allowed you to synthesize ideas and information to form new, more complex interpretations?
○ A great deal ○ A lot ○ A moderate amount ○ A little ○ None at all

11. To what extent has the HAP 1 course allowed you to evaluate the accuracy of information and allowed you to draw your own conclusions about the information?
○ A great deal ○ A lot ○ A moderate amount ○ A little ○ None at all

12. To what extent has the HAP 1 course emphasized the application of information or concepts to practical problems or new situations?
○ A great deal ○ A lot ○ A moderate amount ○ A little ○ None at all

13. To what extent do you agree with the statement:
"The HAP 1 course has taught me to learn effectively on my own."
○ Strongly agree ○ Somewhat agree ○ Neither agree nor disagree ○ Somewhat disagree ○ Strongly disagree

14. To what extent do you agree with the statement:
"The HAP 1 course has taught me to learn effectively with other individuals."
○ Strongly agree ○ Somewhat agree ○ Neither agree nor disagree ○ Somewhat disagree ○ Strongly disagree

15. I consider my ethnicity to be:
○ Maori ○ Pasifika ○ Palehia ○ Other

Notes (not available to respondents):

Responses to questions 1 – 14 are scored from 5 - 1.

"HAP 1" identifies the Human Anatomy and Physiology course.

Sub-scales in the Ahlfeldt et al. (2005) and Hopper (2016) version:

1. Cooperative Learning (Questions 1, 2, 3, 7)

2. Cognitive Development (Questions 8, 9, 10, 11, 12)

3. Personal Skills (Questions 4, 5, 6, 13, 14)