

RESEARCH PAPER

Certificate programmes and beyond: a pilot cohort study tracking student pathways and outcomes

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ABSTRACT

While the New Zealand government defines success for bridging and foundation students in certificate-level programmes as completing their entry qualification within the year they start it and then moving on to higher level tertiary study or employment, there is very little data available to assess whether these long term outcome goals are being met, or, indeed, whether success for these students actually fits this narrow definition. This pilot project was developed with the aim of creating a research model that could be used across the bridging and foundation sector to collect longitudinal data to address this knowledge gap. This report outlines the development of the data collection model, describes the results for the research participants over the first three semesters of the project, and their beliefs about the factors within their learning environment that support or impede success, together with their outcomes for the following semester; and discusses the factors that the researcher believes would need addressing if this project is extended to other institutions. Although this was only a pilot project, with a relatively small number of participants, it has produced a wealth of descriptive data that, even at this early stage, indicates that success is indeed a multi-faceted, moving goalpost for those entering tertiary study at the foundation and bridging level.

Keywords: bridging; foundation; certificate; success; outcomes; pathways

Introduction

Students enter certificate programmes at tertiary institutions for many reasons but, ultimately, most of them are looking to gain qualifications to improve their employment opportunities. This paper presents the results for phase one of a project to track long-term outcome data for a cohort of students in three certificate programmes at Unitec Institute of Technology. This is a pilot project focused on developing a model to track certificate-level student outcomes across the sector.

However, while data is currently collected on priority learners' success in relation to rates of course completion, progression to higher levels of study, qualification completion and retention in study (Education Counts, <https://www.educationcounts.govt.nz/home>), there are, at present, few studies collecting data on cohorts of students through to employment. According to the Priority Learners Educational Attainment Working Group (PLEAWG) in the report, *Lifting Our Game: Achieving greater success for learners in foundational tertiary education*:

One of the defining features of programmes for priority learners is that they are focused on attaining specific educational or labour market outcomes. It therefore follows that providers of these programmes need to be tracking the on-going outcomes for these programmes – not only over short timeframes, but also over significant periods of time (such as one to two years following completion).
(PLEAWG, 2012, p. 35).

By focusing on a specific gap in the data collection for certificate programme students, that is, long-term outcomes, it was hoped that this project would provide a more complete picture of learners' progression through a variety of pathways towards employment and careers.

The key objectives of the project were:

- To develop a systematic approach to data collection of long-term outcomes to serve as a model or template for other programmes.
- To identify trends or patterns in certificate learner pathways in general i.e. persistence and retention and to look for connections within these trends to specific variables such as age, ethnic background, gender, work status, family responsibilities, etc.
- To identify events, services, educational practices, etc. that promote learners' success

- To identify factors, barriers, and situations that impede learners' success and/or are causes for dropout.

Research Context

Foundation and bridging programmes underpin the tertiary education system, allowing people designated as “priority learners” by the government, that is, those who have not gained the necessary, or the appropriate, qualifications to enter degree programmes, to acquire these qualifications through undertaking tailored certificate programmes. The primary providers of these programmes have been the Institutes of Technology and the Polytechnics (ITPs). Although, since 2013, when government funding for level-one and level-two programmes became contestable, more of the provision at this level has moved to Private Training Establishments (PTEs).

Approximately every five years, the New Zealand government produces a new strategy document to inform the direction and delivery of tertiary education in relation to its designated priorities for that period. The *Tertiary Education Strategy 2010-15* (TES 2010-15), in noting that, while demand for tertiary education was growing, funding increases were not able to match this growth, signalled the Government's intention to remove funding from programmes with poor outcomes and to target “high-quality qualifications that benefit New Zealanders and contribute to economic growth” (Ministry of Education, 2010, p. 10). Understandably, this policy move led to a high degree of unease amongst those delivering foundation and bridging programmes, primarily because there is widespread concern in the sector that there is very little available data on which to base a credible understanding of what success and retention at this level actually means, or indeed even how to measure it. Noting this lack of data in their report *Lifting Our Game*, PLEAWG (2012) stated: “There is an

urgent need to strengthen the evidence base for decision making” (p. 8) and further, “... we need to improve our ongoing approach to collecting and reporting information about priority learners and their experiences during and after they take part in these programmes ...” (p. 20). The *Tertiary Education Strategy 2014-2019* places even greater emphasis on the need for tertiary education to lead to improved economic outcomes for students and businesses and notes that: “Over the period of this strategy, there will be further development of employment, income and business measures” (MOE & MBIE, 2014, p. 7). This suggests that improved data collection related to outcomes will become increasingly important for tertiary institutions.

Preparation for the workforce in the 21st century increasingly requires post-secondary education, with the value of a bachelor’s degree or higher having been shown to improve chances of stable employment and higher earnings (TEC, 2012). This is an issue being addressed in New Zealand as well as in Australia, Canada, United Kingdom and the United States (Baum, Ma & Payea, 2013). In New Zealand, this is of particular concern with regard to the attainment of University Entrance where the gap between European/Asian students and Māori/Pasifika continues to increase (NZQA, 2011, pp. 49-50). Overall, the completion rates for learners at levels one to three are low. “For example, by the beginning of 2011, less than 39 percent of learners at levels 1 to 3 who began studying in 2006 had completed a qualification” (PLEAWG, 2012, p. 16). However, it is important to note that there is wide variation in range of performance across the sector. For instance, more research is needed to identify what percentage of learners actually enter and complete a higher level of qualification and whether they are entering employment, with the PLEAWG (2012) supporting Mahoney’s (2009) concerns about the lack of longer term outcome data. This project is intended as a step towards addressing this lack of research.

Method

This project is a longitudinal study using the cohort model. It is primarily a descriptive study with some analysis of data (Menard, 2002). A longitudinal study follows subjects over a period of time, in this case intended to be five years, and involves repeated collection and reporting of data at selected intervals over the length of the study. This phase of the study investigates relationships among various factors such as age, work status, ethnic background, and persistence, for one semester (Semester 2, 2013) in relation to learners' retention and persistence and tracks participants pathways and outcomes for the following three semesters, Semester 1 2014, Semester 2 2014 and Semester 1 2015. A limitation of the longitudinal study is that there is no manipulation of variables and therefore it cannot uncover any causal relationships.

Data collection, through case studies, focus groups and contacts with dropouts, aimed to identify factors that appeared to be significantly related to success and persistence and/or dropout, with the objective that analysis of the results would add another dimension to understanding these students' learning needs and provide insight into services to assist them in meeting their educational goals. The intention was to use this first stage of the project to build a design model that could be used to gather similar data across the sector. While this initial stage of the project was undertaken at an institute of technology, the aim was to add a private training establishment (PTE) in year two, and to develop the project as a longitudinal study over a 5-year period, adding further institutions and programmes to the research mix over time.

Other limitations identified were the sample size and possible student dropout. To address the sample size and provide a varied sample, the cohort included all learners in level-two and level-three certificate programmes in the Bridgepoint (Foundation Education)

programmes and the level-two certificate programme, Multiskill Building Construction at Unitec Institute of Technology.

The likely dropout rate was viewed as a particular concern but was also identified as an area of study and interest for the project. Follow-up interviews with dropouts to determine their reason for deciding not to continue studying were planned to be combined with subsequent tracking, if and when they did return to study, which it was hoped would provide valuable information. These actually did not happen as none of the research participants was withdrawn, although one of the students who took part in the case studies said she had dropped out in the final few weeks of her programme.

This first phase, involving the initial design, development, sample selection, database development and the data entry, along with the focus groups and the initiation of the case studies, was critical as it established the design model, that is, the questionnaire and the variables coded into the database, and the focus group and case study format.

Questionnaire

The first part of the questionnaire (see Appendix A) was designed to check students' demographic data and to obtain reliable contact information, including details for someone whom the research participants considered was likely to be able to provide contact information if their contact details changed and the researcher was unable to contact them. The second part of the questionnaire asked the research participants to supply information on a number of variables identified as possible factors that could be related to student success and retention.

Database design

The database was designed as an Microsoft Excel spreadsheet and was set up to allow straightforward transfer of demographic data from the Unitec student information database. Once the initial design was completed, columns were added to include the variables decided on when constructing the questionnaire.

Case studies and focus groups

The primary questions for the case studies and focus groups were developed to encourage feedback from the research participants about their experiences as a student on the programme they were enrolled in and their impressions on the usefulness of Unitec's support services, along with information on their proposed future pathways (see Appendix B).

Sample selection

The sample for this study was selected from students enrolled at Unitec Institute of Technology for Semester 2 2013, in the Level-2 Certificate in Foundation Studies (CFS2) (101 students) and the Level-3 Certificate in Foundation Studies (CFS3) (194 students) programmes in Bridgepoint (Foundation Studies), along with those enrolled in the Level-2 Certificate in Multiskill Building Construction (MBC) (47 students) programme in the Department of Building Technology.

The methodology involved the students completing a questionnaire to gain information on an array of data, including their work commitments, previous study, parents' level of education etc. This was combined with demographic information gained from institutional records, to provide data that was investigated to ascertain whether it was possible to identify relationships between student success and retention and the variables in the data. In order to be able to maintain contact with learners over the intended time period of the

study, it was necessary to put a number of strategies in place. These included negotiating with students at the start of the study to gain their contact information including email addresses and cell phone numbers, and to garner similar information for a significant other in their lives.

Each class was visited to invite students to take part in the research. These visits were set up with the lecturers and the classes chosen were for the course in each certificate, each of which had four courses, that was compulsory for all students. After an introduction explaining the nature of the study and the possible benefits to future students, along with an explanation of the research process, including: the completion of a questionnaire; the opportunity to take part in the case studies and focus groups; the nature of the ongoing contact required; and how students' names would be substituted for a code so that the data they supplied through the questionnaire would remain anonymous to everyone except the researcher, students were asked to indicate whether they wanted to take part in the study. Those who agreed to take part were issued with information sheets and a consent form to sign (see Appendix C). They were told these would be collected the following week to allow them time to reflect on their willingness to participate.

Once the consent forms had been completed, times were again negotiated with lecturers for the researcher to return to administer the questionnaire. In order to capture all the students involved, this actually required a number of visits, both to collect the signed consent forms and to administer the questionnaire. Also, at this point, some students decided they did not want to continue with their participation.

Those students who had indicated their willingness to participate in a case study or focus group were approached towards the end of the semester. Both the case studies and the focus groups proved extremely difficult to organise, despite multiple contacts with students,

so that, eventually, only seven students participated in the case studies and one focus group was held with five students.

Data analysis

At the beginning of Semester 1, 2014, data on learners' educational progression was entered into the database, including their course success rates in Semester 2 2013 and enrolment status (or pathway they had chosen) for Semester 1, 2014.

Progression data for students for the three following semesters was extracted from the Unitec student information database for those research participants who had re-enrolled at Unitec. Participants who were not studying at Unitec were directly contacted at the end of each of the semesters to check their outcomes. Where this proved difficult, contact was attempted through the contact information these students had supplied

Results

A total of 76 questionnaires was returned – 22 from the CFS2; 48 from the CFS3 and 6 from the MBC.

Sample profile

Although there was not a large difference in terms of gender between those who agreed to take part in the research compared to all the students in the three programmes (Figure 1, next page), there was a noticeable difference in terms of age (Figure 2, next page). This was most evident in the age groups <20 years and 20-29 years. While 38% of all the students were aged less than 20 years, only 20% of the research participants were in this age group and, conversely, while only 49% of all the students were in the age group 20-29 years, 62% of the research participants were in this group.

Figure 1

Gender of all students compared to gender of research participants.

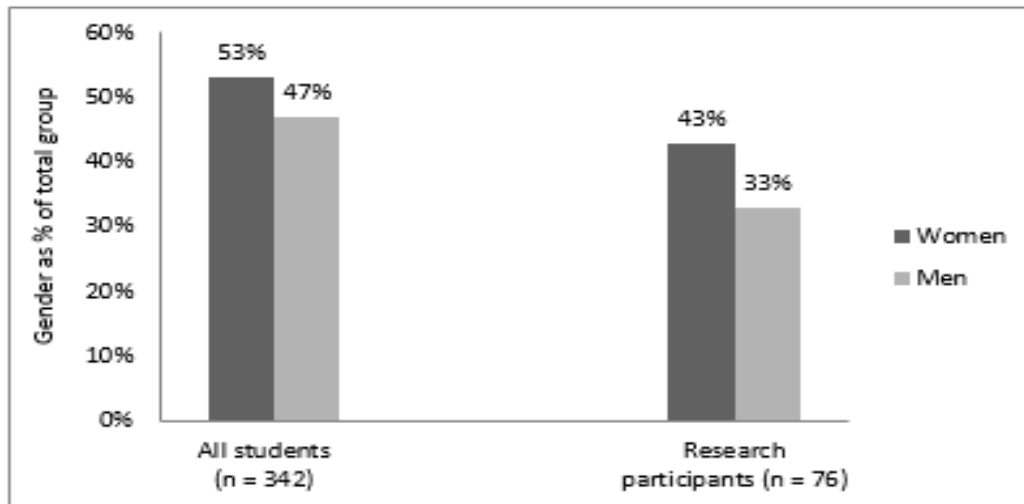
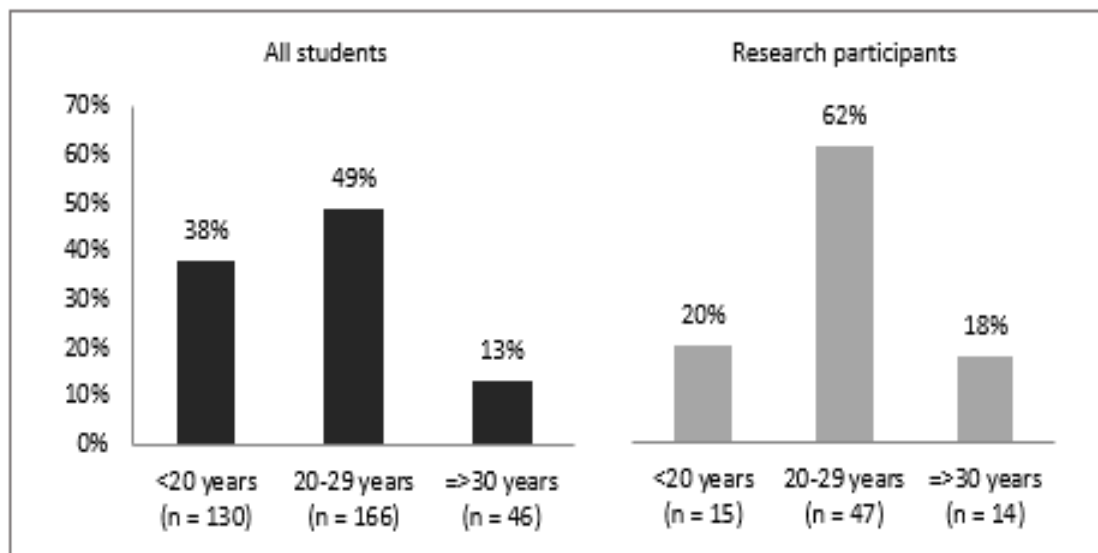


Figure 2

Ages of all students compared to ages of research participants.



For many of the variables for which data was collected from the research participants the numbers were too small to allow any valid connections to be made in regard to their relationship to success and retention. Although some generalisations could usefully be

inferred, it would take further research, with a much larger cohort of learners, to be able to develop statistical correlations. Thus, the data analysis presented here is descriptive. There are, however, some noticeable positive differences in success rates for those students who took part in the research project compared to those who did not and also some interesting comparisons in regard to some of the variables in the data collected for the research participants. Those variables that could be described as showing a possible connection to success and retention are discussed below.

Success and attrition rates – Semester 2 2013

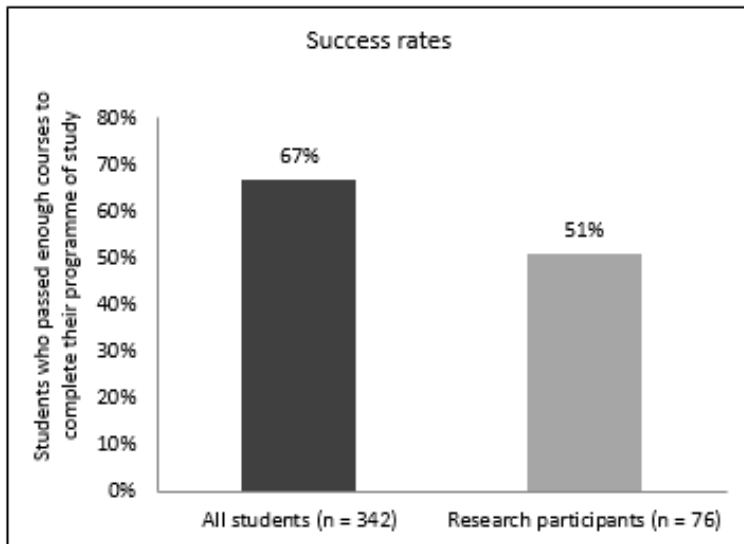
The success and attrition rates for all students in the three programmes were compared to success and attrition rates for the students in the research project. Each programme required students to pass four 15-credit courses to complete the qualification. While a few students were enrolled part-time, none of the research participants was.

Success rates

Overall, the research participants showed higher success rates in all three programmes compared to all students. The success rate (i.e., the percentage of students who passed all their courses, or the courses they needed, to complete the qualification) for the three programmes for all students was 51%, compared to 67% for the research participants (Figure 3).

Figure 3

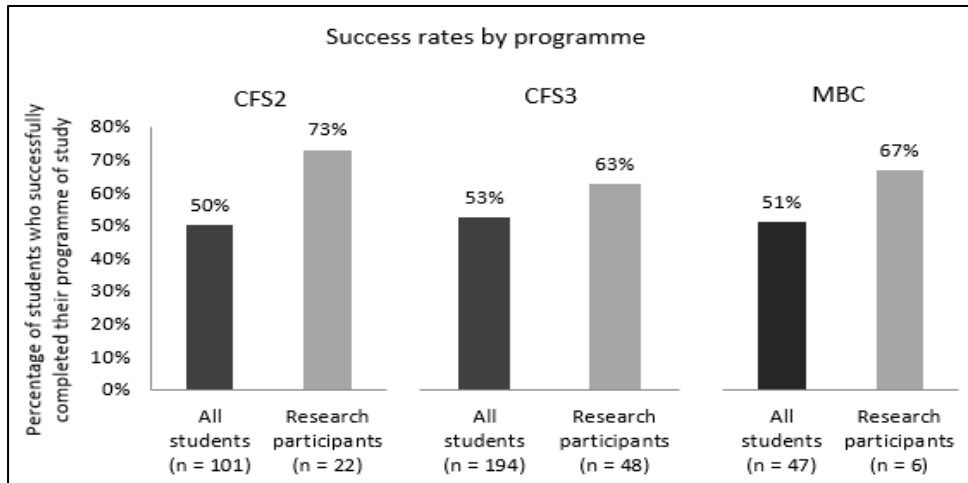
Semester 2 2103 success rates in the CFS2, CFS3 and MBC programmes – success rate for all students compared to the success rate for research participants only.



For all the CFS2 students the success rate was 50% compared to 73% for research participants; for CFS3 it was 53% for all students, compared to 63% for research participants; and for the MBC it was 51% for all students, compared to 67% for research participants (see Figure 4)

Figure 4

Semester 2 2103 success rates by programme for all students in CFS2, CFS3 and MBC compared to success rates for the research participants only.



Attrition rates

While the withdrawal (Withdrawn) rate was low for all three programmes, the number of students who did not pass or complete any courses (DNC/No passes) was much higher. The high DNC/No passes rate and the low Withdrawn rate for the CFS2 and CFS3 are somewhat misleading, however, as it was ascertained that many of the DNC/No passes students had actually dropped out and should have been withdrawn.

Analysis of variables affecting influencing success for the research participants

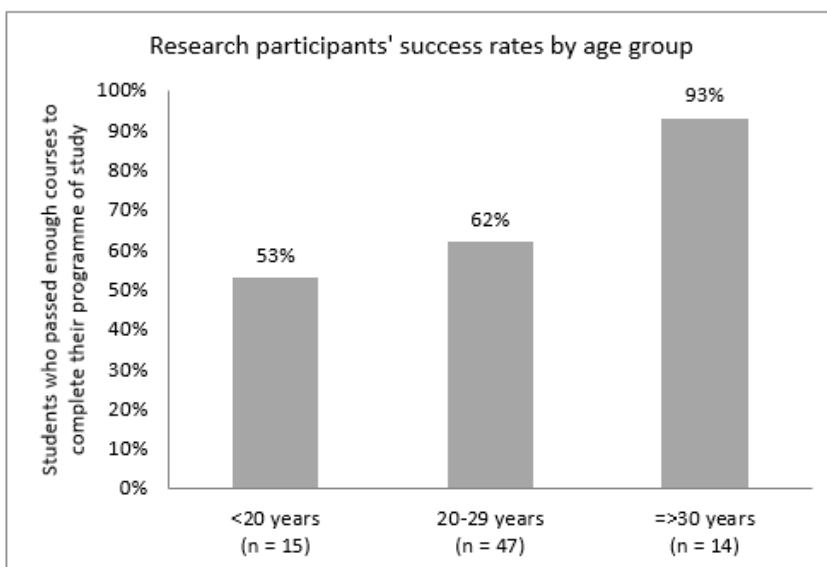
Of the variables for which data was collected from the research participants, the analysis shows that the most obvious relationships were those between age and success and gender and success.

Age

Older students had higher success rates. Of the 15 participants aged under 20 years, 53% passed all their courses, compared to 62% for those aged 20-29 years and 93% for those aged 30 or over years (Figure 5).

Figure 5

Comparison of Semester 2 2103 success rates by age for research participants.



Gender

Women had higher success rates. Forty-three of the research participants were women, of whom 81 % passed their four courses, whereas the four-course pass rate for the 33 men in the study was 45% (Figure 6). However, this difference is also related to age, as all the men aged 30 years or over passed all their courses, as did eight of the nine women in this age group (Figure 7).

Figure 6

Comparison of Semester 2 2013 success rates by gender for all research participants.

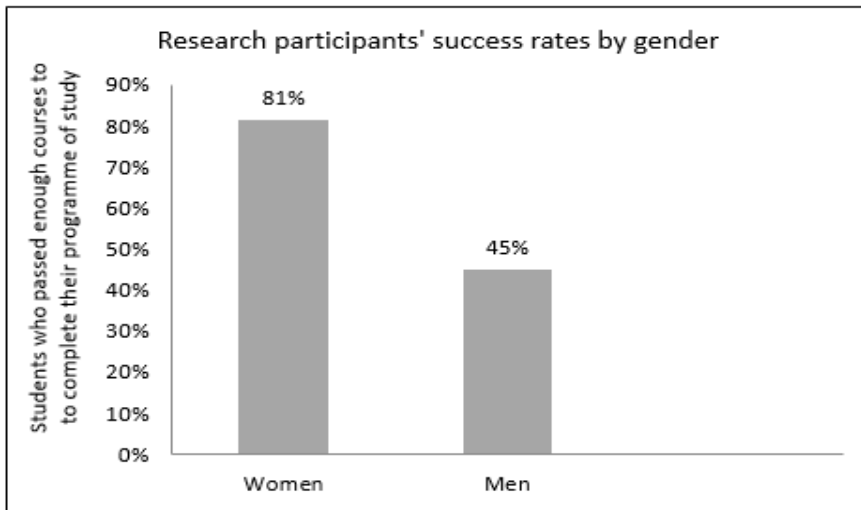
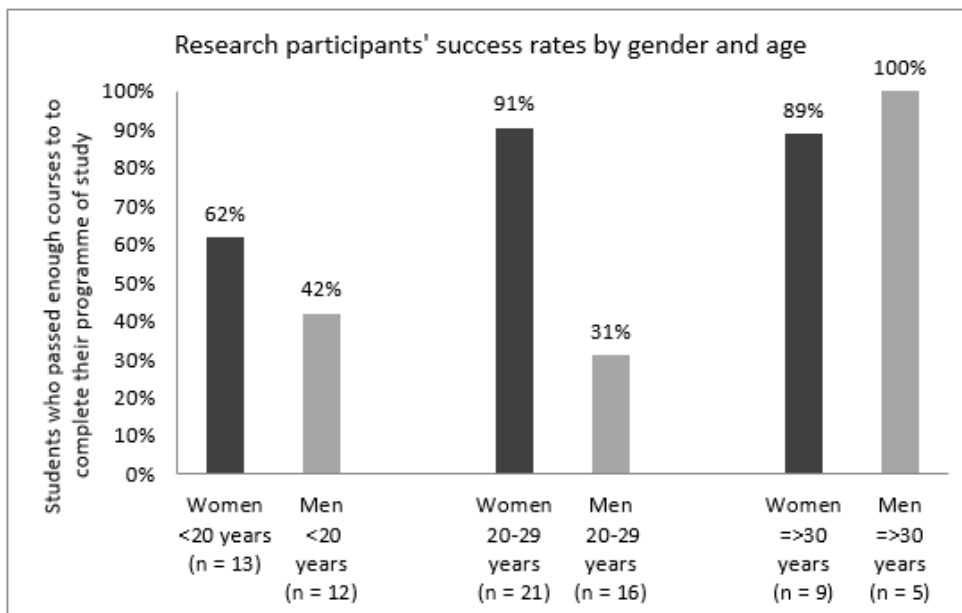


Figure 7

Comparison of Semester 2 2103 success rates by age and gender for CFS2, CFS3 and MBC research participants.

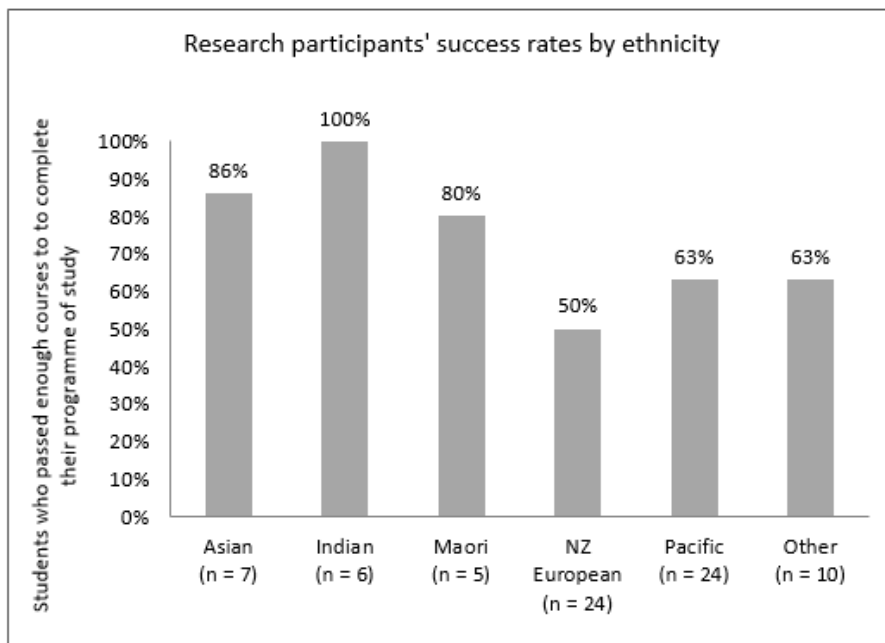


Ethnicity

The number of research participants in each ethnic group was very small, apart from NZ European and Pacific Island, which both had 24 participants. However, even with the small numbers, there are some interesting outcomes to note here (Figure 8). Unlike Ministry of Education statistics for 2009 where rates for the completion of individual courses within level-1 to level-3 certificate programmes were “noticeably lower for Māori than other ethnicities (64%, compared to 68% for Pacific, 70% for Pākehā and 77% for Asian learners)” (PLEAWG, 2012, p. 13), this study showed that the NZ European (Pākehā) success rate was noticeably lower for these participants. Further, as passing all four courses is used as the measure of success here, the difference appears to be significant.

Figure 8

Comparison of Semester 2 2103 success rates by ethnicity for research participants.

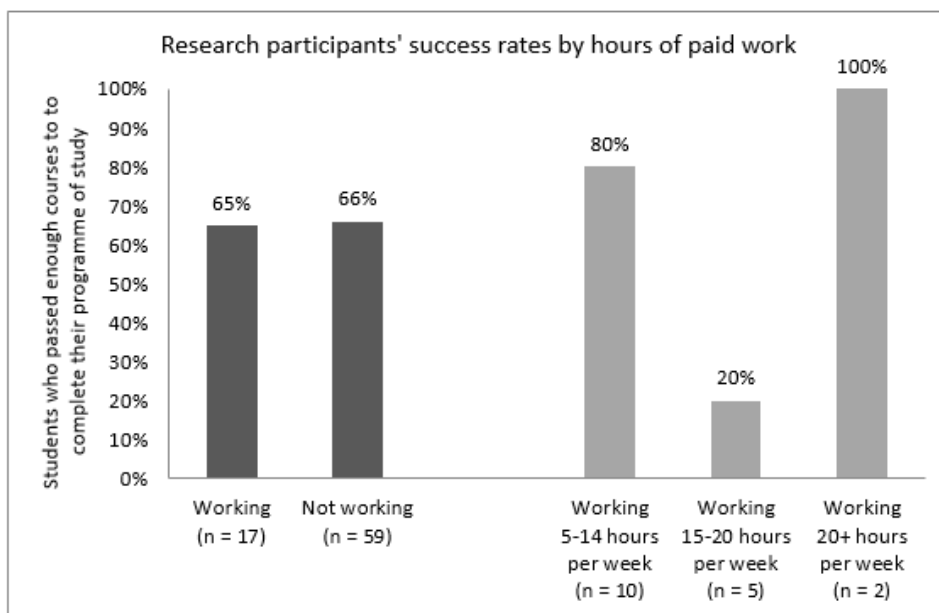


Employment

While success rates for those research participants who were working were almost equal to the rates for those who were not working, once again, the numbers were very small, with only 17 of the 76 indicating that they were employed. Of those 17, the only noticeable difference in success was for those five students who were working 15-20 hours per week, only one of whom passed all their courses. However, both the students who indicated they were working 20+ hours per week passed all their courses (Figure 9).

Figure 9

Comparison of Semester 2 2013 success rates in relation to hours of paid work for research participants.

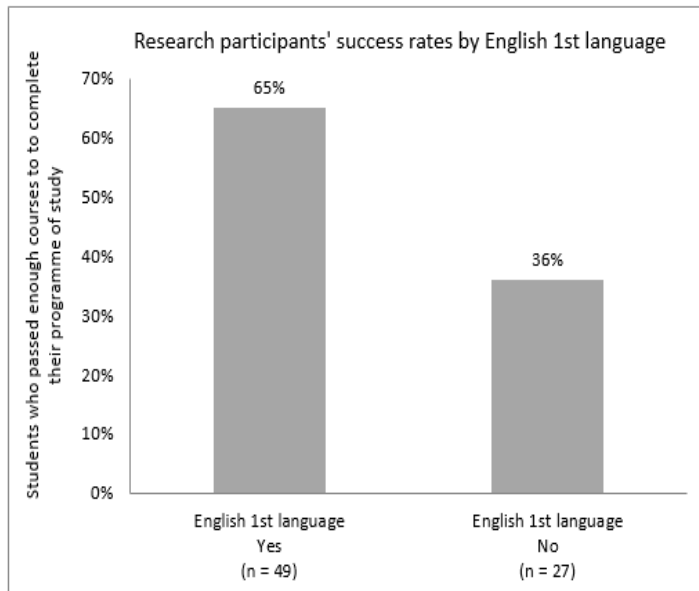


English as first language

Approximately one-third of the participants did not have English as their first language and this factor appeared to have a significant effect on success rates, with only approximately a third of those students passing all their courses (Figure 10).

Figure 10

Comparison of Semester 2 2013 success rates in relation to whether or not English was research participants' first language.



Youth Guarantee

Youth Guarantee students are enrolled in tertiary education under a government-funded initiative to provide fees-free places at levels one to three, for students aged 16 to 19 years who have not yet achieved NCEA (National Certificate of Educational Achievement) Level 2, with the intention of providing a transition to further education and training for students at this level.

Only eight of the research participants were in this category and, while only four of the eight passed all their courses, three of the others passed three of their courses. Thus the success rate of 50% for this group was approximately the same as the overall programme success rates.

Previously taken courses at tertiary level

Of those research participants (47%) who had previously taken courses at Unitec, 75% passed all their courses. Whereas, for those who had taken courses at other places the success rate was lower at 61% (this figure may not be useful, though, as it may include students who had also taken courses at Unitec).

Mother's and father's level of education

Participants' level of success appeared to have a variable relationship to their mother's or father's level of education. While those whose mothers had a university degree certainly had a higher rate of passing all four of their courses than those who did not (86%, compared to the next highest, which was 75% for those whose mothers had a Level-3 certificate, down to 33% for those whose mother's highest level of education was primary school) (Figure 11), the results in relation to participants' father's level of education were less obvious (Figure 12). Again, with such small numbers it was difficult to arrive at any useful conclusions.

Figure 11

Comparison of Semester 2 2013 success rates in relation to research participants' mother's level of education.

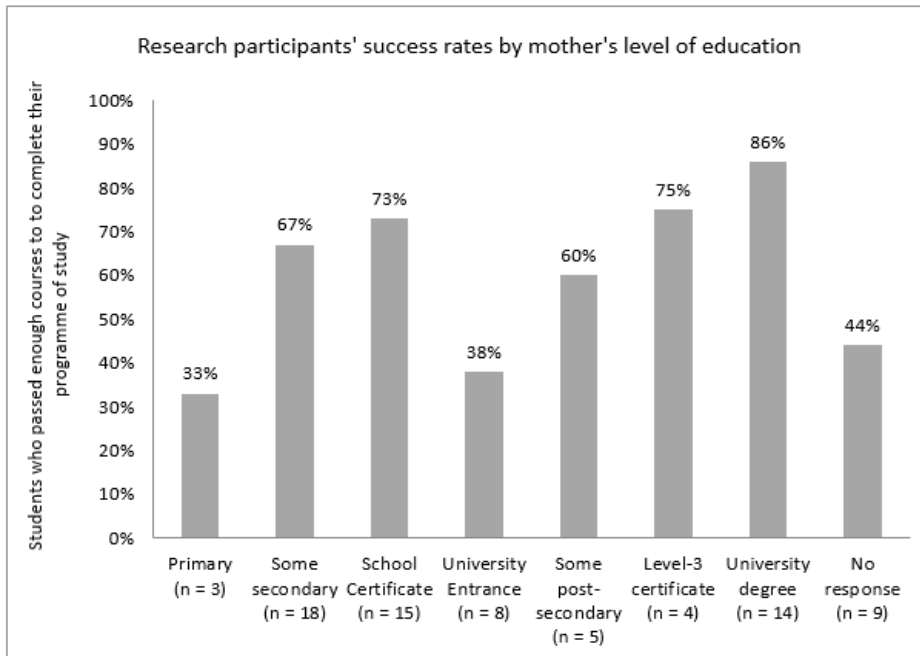
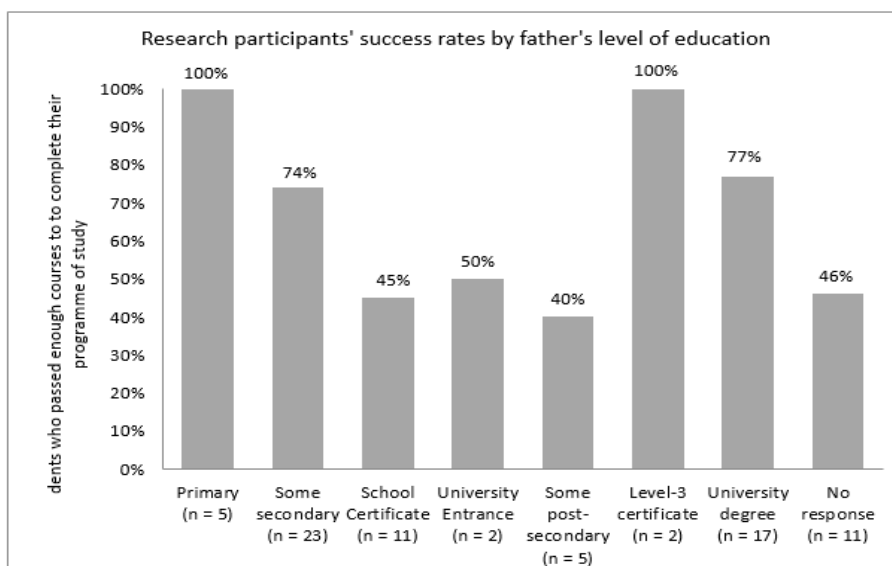


Figure 12

Comparison of Semester 2 2013 success rates in relation to research participants' father's level of education.



Distance to travel to Unitec

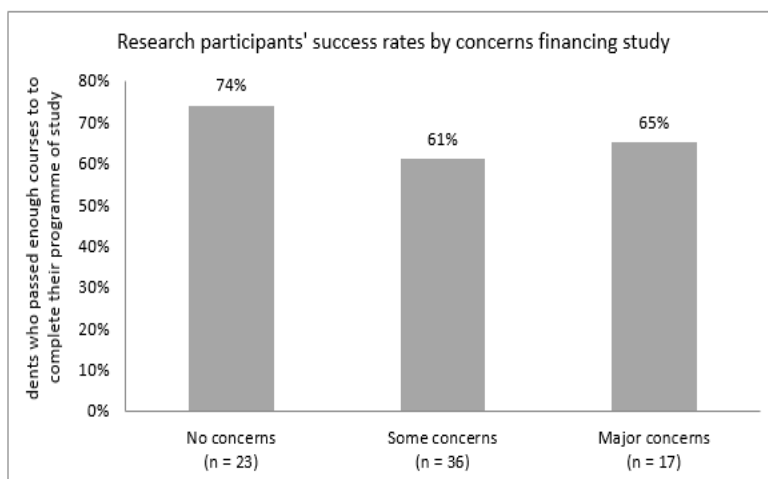
The four research participants who indicated they had the furthest to travel (51-200 kilometres) all passed all their courses (these students may, however, have actually lived much closer to Unitec during term time) and those who were closest to Unitec (<5-5 kilometres) had an above average success rate (76%). Those in the next two groups (6-10 kilometres and 11-50 kilometres) had below average success rates (59% and 62% respectively). As 72% of the students were in these two groups it would appear that being closer to the institution appears to confer a slight advantage.

Concerns financing study

Those research participants who had some or major concerns about financing their study had a success rate slightly below the average for other research participants in their programmes, whereas those who had no concerns had an almost 7% higher success rate (Figure 13).

Figure 13

Comparison of Semester 2 2013 success rates in relation to research participants' concerns about financing their study.



Focus Group and Case Studies

The five participants in the focus group were four women aged 19, 20, 24 and 48 years and one man aged 35 years. The seven participants in the case studies were four women aged 19, 27, 35 and 43 years and three men aged 21, 23 and 34 years. This age range was similar to that for the whole research participant group (Figure 2), which had a higher proportion of students aged 20 years and over compared to the three programmes as a whole.

Focus Group

In the focus group session, participants were asked guiding questions intended to provide responses that would:

- Help ascertain what the institution- based factors were that had supported students in their study and whether there was anything the institution could do to further support students; and
- Identify where they were intending to pathway to next year; gain some insight into what the factors were that had caused some students to drop out (see Appendix B).

The participants were unanimous in agreeing that they had been able to access all the support they needed and that it had been extremely helpful. In discussing the question, “What services, workshops, teaching methods, etc. have contributed to your success (continuing) in the programme?”, participants’ comments included:

Teachers with passion –teachers prepared to stay after class to make sure people are okay.

Three of the students singled out the Maia Maori Centre as a particularly useful resource, and when asked to comment on the question, “Is there anything that would have made study easier for you?”, participants all agreed with the comment:

I've really enjoyed the course and I've had no real problems.

Discussion around the question, “Why do you think some students have withdrawn from the programme?”, ranged from views about students’ attitudes to study, to financial problems and issues managing childcare and study:

Some students dropped out because they found the courses too hard.

A lot of young students dropped out because their courses were free or they feel as if they are – even if they have a loan they don't seem to think about having to pay it back – so they really don't feel accountable to anyone. Also, many of them are just lazy.

Family and personal problems are major reasons for a lot of people dropping out.

In response to the question, “What are your educational plans for next semester?”, everyone indicated that they intended to undertake further study.

Case Studies

The guiding questions used in the case study interviews were developed with the intention of gaining more individualised feedback from the participants on the factors they felt had supported them in their study, including time spent on independent study

(homework), and to provide more insight into the pathway goals of students on the programmes (see Appendix B).

For the most part, the interviewees agreed that there was plenty of support available and particularly noted the high quality of the teaching and the preparedness of the lecturers to provide further help if they requested it. Replying to the questions, “Which support services, workshops, teaching strategies ... do you think have helped you to continue in this programme?” and “How many times in the past semester did you seek feedback, help, or assistance from your lecturer on your work?”, the participants all said they had asked for and received help when they needed it, with three participants voicing appreciation for lecturers who provided clear information and instructions. Two participants also indicated particular factors they found helpful, including the support available at Te Puna Ako (the learning support centre) and two others noted that attending tutorials had been very useful, with one saying:

All my lecturers were patient and willing to give individual help. I realised I needed help and it's always good to get help and expand your knowledge

However, one student had found tutorials in one subject:

... challenging because of some of the younger people who came to class late and didn't buy the text and then monopolised the tutorial time.

Also, another student, who said her attendance had been poor, pointed to a particular issue when she said that she had been “too shy to ask for help”. She said:

I asked two of my lecturers for help and they were very helpful but scared to ask my maths lecturer for help. This was probably because I found the course too hard.

She went on to say that and felt that this was “common for Samoan students.” And that she thought:

It would help to have a Samoan person ask students if they need help and to support them to get the help they need.

While two participants said, “Nothing” when asked the question, “What aspects of the programme did you feel negative about or thought were not helpful?”, others had some personal issues with particular aspects of their courses, with one saying that she felt the Maths for Nursing course was too fast for her and another commenting that he felt the course subjects were not aligned to his future career path, adding:

What does Maori tikanga, history etc have to do with industrial design?

The two older women students voiced particular frustrations with what they saw as younger students’ lack of focus and their negative classroom behaviour:

Immature students in some classes. A lot of students swore in class and were disrespectful to others, even when the teacher asked them to stop.

When asked “Does Unitec provide the support you need?”, everyone agreed that there was ample support available, mentioning Te Puna Ako, a good library and good computer access.

Feedback in relation to the question, “Do you find students are supportive of each other at Unitec?” was mixed, with four of the participants answering that they thought students were “very supportive” or that they had found a supportive group of friends, and one saying that they were “mostly supportive”. However, two students had not found that support, remarking:

Students were not supportive of each other – everyone was out for themselves – you stand alone. Group work can fail if you get the wrong people – you need to make sure you pass even if the group fails – I prefer to work alone – students need to learn effective communication skills.

When asked, “This past semester, how much time during a typical week did you spend studying or doing homework?”, two participants said “3-4 hours”, one said, “One hour – easy workload” and one said that they had a “good balance” between classes and study. However, others spent between 20 and 35 hours per week on study.

The final question discussed at these interviews was, “What are your future plans?”. While four of the participants planned to go on to further study, one person was unsure whether he would continue to study or whether he would work, while of the other two who were not going on to study, one wanted to set up his own business and the other was going to look for work.

Participants in both the focus group and case studies were overwhelmingly positive about their study experience, agreeing that the services provided by the institution were extremely supportive, especially in regard to Te Puna Ako and Maia, and that teachers were professional, helpful and caring. Problems identified were mostly related to personal issues in regard to finances and family commitments, although older students were more likely to find the attitudes and lack of commitment of younger students an issue. The one-to-one interviews for the case studies elicited more detailed information than the focus group but the overall themes remained the same for both groups.

Pathway outcomes

The pathway data in Table 1 (p. 29) covers outcomes for Semester 1 2014, Semester 2 2014 and Semester 1 2015.

Semester 1 2014

In Semester 1 2014, the majority of destinations for students (70%) were higher level programmes within Unitec, or at other institutions:

- Forty-three participants (57%) continued their study at Unitec in Semester 1 2014, with 27 (63%) successfully passing all the courses they were enrolled in.
- Five students were enrolled at other institutions and achieved a 100% success rate.
- Twelve participants were in full-time work and 5 were in part-time work.
- Five participants were not in work or study
- Eight participants were not able to be contacted.

Semester 2 2014

In Semester 2 2014, study remained the destination for the majority of participants.

- Thirty-five students (46%) continued their study at Unitec in Semester 1 2014, with 24 (69%) successfully passing all the courses they were enrolled in.
- Six students were enrolled at other institutions and achieved a 100% success rate.
- One participant had joined the Defence Force.
- Twelve participants were in full-time work and one was in part-time work.
- Three participants were not in work or study
- Eighteen participants were not able to be contacted.

Semester 1 2015

In Semester 1 2015, the proportion of participants in further study had dropped to 45%:

Twenty-three participants (30%) continued their study at Unitec in Semester 1 2015, with 8 (35%) successfully passing all the courses they were enrolled in.

- Eleven students were enrolled at other institutions and achieved a 91% success rate.
- One participant was a member the Defence Force.
- Ten participants were in full-time work and three were in part-time work.
- Six participants were not in work or study
- Twenty-two participants were not able to be contacted.

There was a drop from 63% to 45% for participants in further study along with a drop in success rates from 63% to 35% for those studying at Unitec. However, many of the students did pass some of their courses. On the other hand, the number of students studying at other institutions grew from five to 11 and the success rates for these students remained consistently high, at over 90%. The number of participants in work was consistent over this period as was the number of those not in work or study but the number of participants unable to be contacted grew from seven to 22.

Table 1

Research Participants' Pathway Outcomes: Semester 1 2014, Semester 2 2014 and Semester 1 2015

<i>Pathway Outcomes: Study</i>	Semester 1 2014		Semester 2 2014		Semester 1 2015	
	No. of research participants enrolled in level of programme	Success = all courses enrolled in were passed (no. of research participants)	No. of research participants enrolled in level of programme	Success = all courses enrolled in were passed (no. of research participants)	No. of research participants enrolled in level of programme	Success = all courses enrolled in were passed (no. of research participants)
<i>Programme: Unitec</i>						
Bridgepoint:						
CFS2 ¹	1					
CFS3	15	12				
CUP ²	16	8	12	8		
Level 3 certificate			3	3		
Level 4 certificate	3	1	4	4	2	1
Diploma or degree	8	6	16	9	21	7
<i>Programme: Other³</i>						
Level 3 certificate	1	1				
Level 4 certificate			1	1		
University Foundation	1	1	2	2		
Level 5 certificate					2	2
Diploma or degree	2	2	2	2	6	5
Apprenticeship	1	1	1	1	3	3
<i>Pathway Outcomes: Work or Other</i>	Semester 1 2014		Semester 2 2014		Semester 1 2015	
Defence Force			1		1	
Working:						
Full-time	12		12		10	
Part-time	5		2		3	
Not in work or study	5		3		6	
Not contactable	8		18		22	

¹ A student who was enrolled in CFS3 in Semester 2, 2013 but failed all his courses enrolled in CFS2 for Semester 1 2014.

² Certificate of University Preparation (Level 4)

³ Programmes undertaken at institutions other than Unitec.

Note. In Semester 1 2014, one person was working and studying full-time and in Semester 1 2014 and Semester 2 2014, one person was working and studying part-time.

Discussion and Conclusion

Data collection

This first stage of a planned five-year pilot study has thrown up some interesting challenges for the continuation of the project. For instance, while the researcher could

continue a semester by semester investigation into the outcomes for this group of students, the time consuming nature of the study means it would need the involvement of a group of researchers to extend the project to a PTE and other institutions.

The project collected a wide range of data on the research participants and a spreadsheet was set up to facilitate the collation and analysis of that data. Entering the data was a lengthy, mainly manual, process, and one of the most time-consuming aspects of the research was attempting to contact participants to ascertain their destinations for the following three semesters. While those who had continued to study at Unitec could be easily traced through the Unitec student information database, those who had left Unitec proved more difficult to contact. The same people tended to reply immediately to the first text or email, were achieving their goals and were excited to report their progress. Others, took a lot longer to reply and sometimes it took a number of telephone calls to the contacts they had provided (and much explanation) to gain the information needed. By Semester 1 2015, 22 participants were unable to be traced and, thus, the importance of future contacts, and ensuring they are reliable, is an important issue for future development of this project. Endeavouring to set up the focus groups and interviews with people for the case studies was also time consuming as it was extremely difficult to get people to commit to times.

In reviewing the processes involved, it may appear that much of the intensive work could be dealt with by having more researchers involved. While this would certainly help, it would be important that each researcher was responsible for a group of research participants right through the process as, with research such as this, which requires contact over a period of time and involves participants' contacts being approached for information, a relationship based on personal connection and trust needs to be developed and respected. The project was

originally intended to involve more researchers but the intensity of the required commitment made it difficult for people without a research time allocation to be involved.

Significance of the variables chosen

With such small numbers in the research participant group, it is really not possible to make statistically significant judgments on the value of the variables chosen. However, the data does appear to show that being a women and/or being older is an indication of likely success. Women were 36% more likely to pass all their courses than men, with the greatest disparity showing in the 21-29 age group where approximately 60% more women than men were successful. However, this difference disappeared for the 30+ years age group, where the five men in this age group passed all their courses, as did eight of the nine women.

Examining ethnicity as an indicator of success was confusing when compared with Ministry of Education statistics for 2009 as, while those with Asian or Indian ethnicity in the study also had high success rates, the European success rate of 50% was well below the 70% in the Ministry's figures, and the Māori rate of 80% was extremely high in comparison to the Ministry's 64% success rate for Māori (PLEAWG, 2012, p. 13).

The other variables that showed as possibly affecting success rates were:

- Not having English as a first language (students in this group had approximately half the success rate, 35.5%, of those who were first language English speakers);
- Living closer to Unitec, which appeared to give students an advantage, as they had a slightly above average rate of success compared to the approximately 73% of participants who lived further away; and
- Concerns facing study, which also appeared to have some effect, as those who had no concerns were up to 13% more successful than those with concerns in this area.

The results for the remaining variables surveyed did not appear to be significant indicators of success or failure (i.e., level of high school education; undertaking employment; being enrolled as Youth Guarantee student; having previously taken courses at tertiary level; and mother's and father's levels of education).

Factors that promote or impede learners' success

The focus group and case studies were informative in regard to identifying factors likely to promote or impede learners' success. The students who took part in them were generally satisfied with their courses, the teaching on the courses, and the support they received from both their lecturers and Unitec support services, such as the library, the computer drop-in centre, Te Puna Ako, Maia and the Pacific Centre. Any issues these students faced had mostly been able to be solved and had not impeded their ability to succeed.

When asked why they felt some students were not succeeding, comments ranged from suggestions that some students had problems with travel and childcare or found courses too hard, to the belief that some students were just too immature. However, it proved almost impossible to get students who were not achieving to attend either the focus group or take part in the case studies, which is an issue for further stages of the study.

In gathering pathway data for the following three semesters some participants reported financial hurdles as their reason for dropping out of study and five said they were saving to return to study. Indeed, some of the participants in this project have already returned to study and achieved success after failing to complete their studies in previous semesters. Thus, it is hoped that the number of positive study outcomes will grow and that there will also be an increase in those gaining employment as result of their qualifications. Indeed, in 1999, in Bridgepoint's earlier incarnation as the School of Foundation Studies, a

lecturer on the programme undertook data analysis, which showed that, in 1994, only 48% of those students completing the *Certificate in Foundation Studies: Whitinga* (CFSW) in 1993 had bridged to programmes at Unitec, or another tertiary institution, or had gained employment. However, by 1996, this figure had grown to 89% (McKenzie, 1999).

This research was primarily aimed at developing a research model to gain information and to develop a framework for longitudinal research on the long-term outcomes for certificate-level students and, in particular, TES priority students – a research gap identified in the report, *Lifting Our Game: Achieving greater success for learners in foundational tertiary education* (PLEAWG, 2012). What this research indicates is that the journey to success for bridging and foundation students is multifaceted and non-linear, which is often at odds with government funding models.

It will be interesting to complete the next stages of the study and further assess participants' outcomes to see if they fit the hypothesis that, over time, students who have dropped out, or taken a semester or two break from study, often return to complete further study – success is a moving goalpost for many foundation and bridging students and it deserves to be recognised as such. For instance, those 41% of students who, for various reasons, had not initially met the government-defined requirement for success in 1999 were actually succeeding but where did they fit in the government's success statistics?

This project has provided a wealth of in-depth data on certificate programme students, albeit for a small number. Whether it is possible to replicate the research across other institutions is debatable; it would depend on the committed involvement of a number of researchers, dedicated to continuing the research over a period of at least five years, to gain the data necessary to effectively track certificate learners' pathways to success. However, without this data, the gap in knowledge in relation to the on-going outcomes and related

successes of foundation and bridging students, will continue to be incomplete, based as it is at present on narrow, government-defined data, which denies the reality of these students' experiences.

Acknowledgements

In designing this project, I was fortunate to have collegial input from Dr Barbara Bonham, from the Department of Leadership and Higher Education at Appalachian State University in North Carolina, who, in Semester 1 2013, was visiting Unitec as an Adjunct Professor. Dr Bonham's wealth of research experience, along with her long involvement in education at the bridging and foundation level in the United States was invaluable, as was her willingness to share her expertise and to take a hands-on role in ensuring this project was able to take place. I cannot thank her enough for her warm guidance.

I would also like to thank the students who took part in this project, especially those who have continued to engage with my requests for updated information regarding their pathways. They have been a source of inspiration as I follow their progress towards success and admire their ability to recover from setbacks.

My colleagues teaching on the Bridgepoint and Department of Building Technology programmes were generous in giving up teaching time so I could involve their students in this project and their goodwill made the initial data collection so much easier.

And last, but not least, support for this work was provided by Ako Aotearoa National Centre for Tertiary Teaching Excellence through its Regional Hub Project Funding scheme. While their funding made the project possible, I would also like to thank them for their patience and support in helping me to complete the project.

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Appendix A: Questionnaire

Certificate Programmes and Beyond: A Longitudinal Study Tracking the Pathways and Factors Influencing Students' Choices

SURVEY OF STUDENTS IN LEVEL 2 AND 3 CERTIFICATE PROGRAMMES AT UNITEC

All the information you provide will be confidential. PLEASE PRINT.

Your name, email address, and contact person's information will help facilitate our follow-up and improve the tertiary study experience for you and others.

Name

First

Last

Birth Year

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Email Address (preferably not your Unitec email)

--

Home phone number

Cellphone number

--	--

Address

--

Contact Person

In case we lose touch with you, we would like you to provide us with the name and contact details of a person we can contact to track your progress over the next five years.

First name

Last name

--	--

Email Address

--

Phone number

Cellphone number

--	--

Other contact information (eg. Address, other phone numbers)

--

Congratulations on your enrolment at Unitec in a Certificate Level 2 or Level 3 Programme. We are very interested in your experiences as you progress through your tertiary study pathway programmes and on to a career. This study has been developed to access information from you that can help to improve students' tertiary study experience.

We will place an ID NUMBER on this form for entry into the database. This will ensure that your name will remain confidential and none of the information you give us will be able to be used to identify you in any of the reports derived from this project.

Thank you very much for your help with this important project.

1. Gender

Female	<input type="checkbox"/>	Male	<input type="checkbox"/>
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2. Ethnic Group

With which ethnic group(s) do you identify? You can tick up to three boxes.

New Zealand European	<input type="checkbox"/>
Maori	<input type="checkbox"/>
Samoan	<input type="checkbox"/>
Cook Island Maori	<input type="checkbox"/>
Tongan	<input type="checkbox"/>
Niuean	<input type="checkbox"/>
Tokelauan	<input type="checkbox"/>
Chinese	<input type="checkbox"/>
Korean	<input type="checkbox"/>
Taiwanese	<input type="checkbox"/>
Vietnamese	<input type="checkbox"/>
Thai	<input type="checkbox"/>
Filipino	<input type="checkbox"/>
Indian	<input type="checkbox"/>
Other – please specify _____	<input type="checkbox"/>

3. New Zealand Citizen or New Zealand Permanent Resident

Are you a New Zealand Citizen?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<i>If no</i> , are you a New Zealand Permanent Resident	Yes <input type="checkbox"/>	No <input type="checkbox"/>

4. Employment

Are you working?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<i>If yes</i> , how many hours per week do you work (on average)?	_____	

5. Language

Is English your first language?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
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6. Secondary Schooling

Did you attend high school in New Zealand?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If you did not attend high school in New Zealand, in which country did you attend high school?	_____	
In what year did you leave high school?:		
Year 9 (Form 3)	<input type="checkbox"/>	
Year 10 (Form 4)	<input type="checkbox"/>	
Year 11 (Form 5)	<input type="checkbox"/>	
Year 12 (Form 6)	<input type="checkbox"/>	
Year 13 (Form 7)	<input type="checkbox"/>	
Other (please state)	_____	

7. Current Study Level

What level are you studying at this semester? Please tick 1 box only.

Level 2	<input type="checkbox"/>	Level 3	<input type="checkbox"/>
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8. Youth Guarantee

Are you enrolled as a Youth Guarantee student?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
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9. Part-time or Full-time Study

Are you enrolled in Full-time study?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<i>If no</i> , how many courses are you taking?	_____	

10. Previous Tertiary Study

Prior to this semester, have you ever previously taken courses at Unitec?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Since leaving high school, have you ever taken courses, whether for credit or not for credit, at any other institution (polytechnic, private training establishment (PTE), wananga, College of Education, university).	Yes <input type="checkbox"/>	No <input type="checkbox"/>

11. Parents' Level of Education

What is the highest level of formal education obtained by your parents?		
Please tick 2 boxes only – one box for your mother and one box for your father		
<i>Qualification</i>	<i>Mother</i>	<i>Father</i>
Primary school	<input type="checkbox"/>	<input type="checkbox"/>
Some high school	<input type="checkbox"/>	<input type="checkbox"/>
School Certificate	<input type="checkbox"/>	<input type="checkbox"/>
University Entrance	<input type="checkbox"/>	<input type="checkbox"/>
Some postsecondary or university	<input type="checkbox"/>	<input type="checkbox"/>
Gained a Level 2 certificate	<input type="checkbox"/>	<input type="checkbox"/>
Gained a Level 3 certificate	<input type="checkbox"/>	<input type="checkbox"/>
University degree	<input type="checkbox"/>	<input type="checkbox"/>
Master's or doctorate degree	<input type="checkbox"/>	<input type="checkbox"/>

12. Planned Study Level

What is the highest academic certificate or degree that you intend to obtain?

Please tick 2 boxes only – one box in each column

<i>Qualification</i>	<i>Highest Planned</i>	<i>Highest Planned at Unitec</i>
None	<input type="checkbox"/>	<input type="checkbox"/>
Certificate Level 2	<input type="checkbox"/>	<input type="checkbox"/>
Certificate Level 3	<input type="checkbox"/>	<input type="checkbox"/>
Certificate Level 4	<input type="checkbox"/>	<input type="checkbox"/>
Diploma	<input type="checkbox"/>	<input type="checkbox"/>
Bachelor's degree	<input type="checkbox"/>	<input type="checkbox"/>
Postgraduate certificate	<input type="checkbox"/>	<input type="checkbox"/>
Masters	<input type="checkbox"/>	<input type="checkbox"/>
Doctorate	<input type="checkbox"/>	<input type="checkbox"/>

13. Intended Career

What is your intended career?: _____

14. Distance from Unitec

Approximately how many kilometres is Unitec from your home/where you stay?

5 kms or less	<input type="checkbox"/>
6-10 kms	<input type="checkbox"/>
11-50 kms	<input type="checkbox"/>
51-100 kms	<input type="checkbox"/>
101-200 kms	<input type="checkbox"/>

15. Financing Your Study

Do you have any concerns about your ability to finance your tertiary study?

(Please tick one box only)

None (I am confident that I will have sufficient funds)	<input type="checkbox"/>
Some (but I will probably have enough funds)	<input type="checkbox"/>
Major (not sure that I will have enough funds to complete my study)	<input type="checkbox"/>

Appendix B: Guiding questions for case studies and focus groups

QUESTIONS FOR CASE STUDIES (Individual interviews with students)

1. Which support services, workshops, teaching strategies, ... have helped you to continue in this program?
2. What aspects of the programme did you feel negative about or thought were not helpful?
3. This past semester, how much time during a typical week have you spent studying or doing homework?
4. How many times in the past semester did you seek feedback, help, or assistance from your lecturer on your work?
5. Does Unitec provide the support you need?
6. Do you find students are supportive of each other at Unitec?
7. What are your future plans?

QUESTIONS FOR FOCUS GROUP

1. What services, workshops, teaching methods, etc. have contributed to your success (continuing) in the programme?
2. Why do you think some students have withdrawn from the programme?
3. Is there anything that would have made study easier for you?
4. What are your educational plans for next semester?

Appendix C: Information sheet and consent form for research participants



Information Sheet for Participants

Research Project Title

Certificate Programmes and Beyond: A Longitudinal Study Tracking the Pathways and Factors Influencing Students' Choices

Synopsis of project

The project's aim is to collect long term outcome data on persistence, retention, and employment for a cohort of students enrolled in Semester 1, 2013 in Level 2 and 3 Certificate Programmes at Unitec. This data will be analysed to provide more specific information on the success rates (persistence and retention) of students with different characteristics and choices in pathways.

What we are doing

There is a gap in our knowledge in regard to the pathways taken by those students who begin tertiary study in certificates at levels 2 and 3. This study is designed to fill that gap. The information will help the programmes at Unitec offering level 2 and 3 certificates identify those strategies, services, etc. that help students to continue. It will also identify particular needs identified by students, as well as obstacles to their continuation in the programme. Overall, the intent of the study is to improve learners' success by tracking their progress and listening to their ideas and suggestions.

What it will mean for you

All those who agree to participate will be asked to complete a questionnaire providing some personal, educational and career-related information, as well as contact information for themselves and another person, as a back-up. This information will be entered into a confidential database, where you will be identified by a unique ID. Your progress in Semester 1, 2013 and subsequent semesters will be entered into the database, including whether or not you have passed courses. If, at any time, you should withdraw from your programme at Unitec, you will be contacted and requested to provide information regarding the factors that affected your withdrawal.

In addition, a sample of 15 students will be asked to participate in one Focus Group per semester. This will be what is known as a representative sample. That means we will try to select participants for the Focus Groups who represent different gender, age, ethnicity and programmes. The focus group will be one hour long and occur at the end of the semester. It will be held in a Bridgepoint classroom and scheduled during a lunch hour, with refreshments provided. The following questions will be asked during that session:

1. What services, workshops, teaching methods, etc. have contributed to your success (continuing) in the programme?
2. Why do you think some students have withdrawn from the programme?
3. What are your educational plans for next semester?

This session will provide learners with an opportunity to discuss what services, activities, teaching methods, and other opportunities at Unitec have contributed to their continuation in the programme.

In addition, 10 students will be selected to meet individually with the Research Project Leader for a 30-minute session to discuss their experiences in the programme. These conversations will be taped and the information collected will be transcribed.

For both the focus groups and the individual session, participation is voluntary. Learners may bring a support person if they choose. The information collected will be shared with the transcriber, researchers and supervisor on this project. The transcriber is not a member of the research team and will be required to sign a confidentiality agreement. The students' unique ID number for this project will be used for the transcriptions, not their names. In addition, strict confidentiality will be maintained and no student will be identified in any publications.

Students will be contacted to request their participation in a focus group or case study session within six weeks of the Consent Forms and Questionnaires having been collected.

The identity of the learner will always be kept confidential at all times in the study.

If you agree to participate, you and, if you are under 18 your parent/guardian, will be asked to sign a consent form. This does not stop you from changing your mind if you wish to withdraw from the project. Your parent/guardian can also ask for you to be withdrawn. Your name, and information that may identify you, will be kept completely confidential. All information collected from you will be stored on a password-protected file and only you, the three researchers and the project director will have access to this information.

Please contact the project director at any time, if you need more information about the project or if you have any concerns. The project director is:

Rae Trewartha, phone: 815 4321 ext. 8378; 021 802 578; or email: rtrewartha@unitec.ac.nz

UREC REGISTRATION NUMBER: 2013-1011

This study has been approved by the UNITEC Research Ethics Committee from (27 March 2013) to (27 March 2016). If you have any complaints or reservations about the ethical conduct of this research, you may contact the Committee through the UREC Secretary (ph: 09 815-4321 ext 6162). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

Participant Consent Form

Participant Name _____

Research Project Title:

Certificate Programmes and Beyond: A Longitudinal Study Tracking the Pathways and Factors Influencing Students' Choices

I have had the research project explained to me and I have read and understand the information sheet given to me.

I understand that I don't have to be part of this if I don't want to and, whether I take part in completing the questionnaire, and/or also participate in a focus group or case study, I may withdraw at any time prior to the completion of the research project

I understand that if I withdraw from Unitec this does not mean I have withdrawn from the research project. Unless I withdraw from the research project, I agree to the researchers continuing to contact me over the next five years to track my study and career pathways.

A student can withdraw from the project at any time by contacting the Project Director: Rae Trewartha – Phone: 8154321 x 8378; 021 802 578; email: rtrewartha@unitec.ac.nz.

I understand that nothing I say will be used to identify me and in any of the reports on this project my name will not be used. I also understand that all the information that I give will be stored securely on a computer at Unitec for a period of five years.

I understand that my discussion with the researcher will be taped and transcribed.

I understand that I can see the finished research document.

I have had time to consider everything and I give my consent to be a part of this project.

Would you be willing to be contacted about the possibility of participation in a one-hour Focus Group meeting at the end of the semester?

Yes <input type="checkbox"/>	No <input type="checkbox"/>
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Would you be willing to be contacted about the possibility of participation in a Case Study for this project?

Yes <input type="checkbox"/>	No <input type="checkbox"/>
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Participant Signature: *Date:*

Project Researcher/Director: *Date:*

UREC REGISTRATION NUMBER: 2013-1011

This study has been approved by the UNITEC Research Ethics Committee from (27 March 2013) to (27 March 2016). If you have any complaints or reservations about the ethical conduct of this research, you may contact the Committee through the UREC Secretary (ph: 09 815-4321 ext 6162).

Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcomes.