

## #11 How well does NCEA prepare students for university study?

### Introduction

Universities had significant input into the design of the NCEA, and they are fully involved in the system's ongoing review and development. NZQA's Technical Overview Group Assessment Committee includes university experts in assessment. In 2011 the Committee consists of Emeritus Professor Gary Hawke (Chair), Professor Terry Crooks, Emeritus Professor Cedric Hall, Honorary Professor John Hattie, Professor Jim Smith and Associate Professor Alison Gilmore.

The most formal benchmark is University Entrance. The Education Act 1989 requires NZQA to consult with the Council of each university and the Universities New Zealand Committee (NZVCC) in setting the standard for entrance to university.

### University Entrance

University Entrance is the minimum standard students need to reach to apply for entry to university courses. Universities have additional requirements for entry to many degree programmes. They will specify NCEA courses that students should complete and, for some degrees, NCEA results are used to generate entry scores.

For some degree programmes, students need NCEA results that are well in advance of University Entrance. Universities publish these entry requirements in advance. For example:

- Entry to Bachelor of Engineering (Honours) at [University of Auckland](#) in 2011 requires a minimum of 18 credits in each of Mathematics with Calculus and Physics. Students are selected on the basis of their rank score generated from NCEA results. Also recommended: Chemistry, Biology and language-rich subjects (Classics, English, Geography, History, History of Art, Te Reo Maori, Te Reo Rangatira).

### Comments from the sector

*“ Long ago, the single final university examination (with or without “terms”) disappeared. It is perhaps not surprising, therefore, that the NCEA rather than the single final high school examination is immeasurably superior at predicting the results of first year. ”*

Professor John Hattie, University of Auckland  
The Black Box of Tertiary Assessment:  
An Impending Revolution

*“ At both university and polytechnic, students with University Entrance have higher performance, in terms of five-year qualification completion rates, than those who don't have University Entrance. ”*

Engler, R., & Smyth, R., 2011, Doing a Bachelor's Degree: Comparing University Entrance and NCEA Levels. Ministry of Education

## Preparation for university

The first group of students to leave school with Level 3 NCEA results started tertiary study from 2005 and many have now completed university degrees. In recent years researchers have been studying how achievement in NCEA predicts performance at university and polytechnic.

In 2010, the Ministry of Education published results from three studies looking at the performance of first-year students at university who had completed NCEA Level 3 and/or University Entrance.

- NCEA performance was a stronger predictor of first-year university performance than University Entrance.
- Students with higher levels of success in NCEA were more likely to go on to bachelors-level study.
- Males and females with comparable NCEA scores are equally likely to go to university, and their likelihood of university success is similar.
- For students with above-average academic success at school, other factors make almost no difference to their tertiary performance (e.g. gender, ethnicity, secondary school attended, university course, direct transition to university or following a year off).
- Not all higher-achieving school students perform equally well at university – and some with lower school achievement outperformed students with higher school achievement.

Engler, R. (2010) Academic performance of first-year bachelors students at university. Ministry of Education

In 2011, the Ministry of Education also looked at the tertiary progress of students leaving school with University Entrance:

- Students with NCEA Level 3 and University Entrance do better than those with University Entrance alone.
- Students with University Entrance alone do better than those with lower levels of NCEA achievement.
- Of all school leavers with NCEA Level 3 and University Entrance:
  - 82% of students commenced bachelors degrees.
  - Only 9% were not involved in further study.

Engler, R., & Smyth, R. (2011) *Doing a Bachelor's Degree: Comparing University Entrance and NCEA Levels*. Ministry of Education

## Comments from the sector

“NCEA assessment is consistent with much of what we see in assessment at university. Most university assessment is not a simple ‘multi-choice’ approach and it’s not all exams – there’s a lot of essay work, problem solving and so on. Kids who do well in NCEA have shown they can process information and develop ideas. NCEA is a performance-based approach, using authentic, contextualised assessment. So is university assessment.”

Professor Jeff Smith, University of Otago. Formerly Associate Dean of Graduate School of Education, Rutgers University, New Jersey, USA.

## The learning experience

“The style of assessment at university now closely resembles that of NCEA. Students are working on major assessments throughout the year with some courses having final examinations and some being fully internally assessed. Little wonder the Auckland University research found that NCEA was the best predictor of success at university.”

Michael Williams, Principal, Pakuranga College

## How well do NCEA students perform at university?

University of Auckland researchers have shown that students who do well in NCEA also do well at university:

“What we looked at was the relationship between the success in the NCEA and the success at the first year university. Typically we expect a relationship in my number system of about 0.3 on a scale of zero to one. The NCEA is more like 0.5 or 0.6, which says it’s a dramatically better predictor. Students who do well in the NCEA also do well in university.”

“... (At university) we expect students now to work quite hard all throughout the whole year, staying in a lot more control of their learning – so what we’re doing in the NCEA is mimicking what happens both in the workplace and in the university. It teaches them to listen to feedback. It teaches them to actually seek the feedback about what they can and can’t do. It teaches them to know what their strengths are and know what their gaps are – and to go about finding ways to fill those gaps, either by themselves, with their peers or with their teachers. Which is exactly what the university demands of our students.”

Professor John Hattie

The researchers compared the performance of students during their first year at university who gained university entrance through NCEA and Cambridge International examination systems. It was found that NCEA is almost five times more effective in predicting first-year performance at university.

- The outcome predictability of first-year university results from the NCEA is up to five times stronger than all of the other secondary school assessment systems in New Zealand and worldwide. This outstanding predictive power suggests that the NCEA can provide high quality information for tertiary education admission purposes.
- This pattern of lower correlation between secondary school performance on norm-based examination and university success has long been documented, with little progress made in improving the relationships.

## The learning experience

“Graduates of Diocesan School for Girls have remarked that NCEA prepares them well for tertiary study, particularly in research, essay writing and problem solving. Because NCEA is standards based they are well used to recognizing the hierarchy of a question or an assignment and can respond in a way that shows their higher level thinking.”

Margaret van Meeuwen,  
Assistant Principal, Diocesan School for Girls

“We have had positive feedback from our former students at University that they have felt well prepared for University study. Aspects that they have commented on include: **a.** Learning the skills of self management of their own learning. **b.** Meeting deadlines. **c.** The emphasis on literacy skills and thinking skills. **d.** The mix of internal and external assessment means that they have had experience with managing deadlines, workflow and different types of assessment. They feel better able to manage a University workload.”

John Grant, Principal, Kaipara College

“When I got to university I found I had already covered a lot of the content. In Geography, for example I didn’t need to go on a field trip because I had done that work within NCEA. And I knew about geographical information systems because we used them at school – some university students hadn’t even heard of them.”

Jamie Rodriguez left Diocesan School for Girls in 2009

## How well do NCEA students perform at university? CONT.

- The higher correlation between the NCEA and university success may be due to the similarities in the assessment and the subsequent wash-back on the teaching systems. Both require ongoing assessments involving a variety of tasks (projects, essays, portfolios) throughout the year, together with a final examination.

Researchers suggested that students who aspire to succeed in university could benefit by aiming for more Merit and Excellence grades, even if that meant gaining fewer credits.

(Note: Since this study was conducted, course and certificate endorsements have been introduced – both require numbers of Merit and Excellence grades).

Shulruf, Hattie and Tumen. 2008. *The predictability of enrolment and first-year university results from secondary school performance: the New Zealand National Certificate of Educational Achievement*. Victoria University of Wellington

## The learning experience

*“ Having assessment throughout the year for NCEA reflects the way university is run better than an end of year exam – we have essays, tests and semester exams during the year. NCEA did prepare us better in terms of a consistent level of assessments.*

*Through the Merit and Excellence questions, NCEA required a level of thinking beyond knowledge recall. There was lots of knowledge recall in the first year of my university programme. High school required a lot more thinking and there was more inspiring teaching.*

*Some people say NCEA lacks stratification – that the three grades don’t separate students as well as a percentage mark. But that’s wrong. You do 30 to 40 standards in a year so putting those results together gives an accurate picture of each student’s abilities. You get more discrimination than a percentage score. Exam scores give a false sense of accuracy – the difference between 91% and 93% is not greatly significant compared with the mix of three NCEA grades over a whole year’s work. And they now have a way to generate grade point averages so that helps as well.*

*The fact is that after the first year of university it didn’t particularly matter what school qualifications you did. ”*

Andrew MacDonald, Medical Student, Auckland University

[Andrew MacDonald left Rangitoto College in 2006 and is now studying medicine at the University of Auckland. Andrew was a Premier Scholar in New Zealand Scholarship and top scholar in Science. At the University of Auckland he won the Eric Hector Goodfellow Memorial Prize as the top pre-clinical student and the Leukemia and Blood Foundation prize for the highest grades in immunology, haematology and microbiology. Andrew has had research published by Oxford University Press and presented at conferences on his immunological research.]

*“ The transition from school to uni was very smooth. Under NCEA you’re working hard all through the year... you’re always aware of the assessments you’ve got at the moment... you’ve got a plan and you know there’s more coming, and so you’re always looking forward. Which is quite similar to uni where everything’s mapped out for you and you know when your assessments are... ”*

Olivia Burt, University of Auckland student, formerly Pakuranga College