ATTACHMENT 1: VU Block Model Equity Cohort Analysis Extract

VICTORIA UNIVERSITY
MELBOURNE AUSTRALIA

EVALUATING VU BLOCK MODEL®

5 YEARS ON

Prepared by Data and Insights

Results at conclusion of First Half, 2023

31/08/2023
Version 1.0

EXECUTIVE SUMMARY

This report revisits *Evaluating VU's Block Model – January 2021* and finds early results for undergraduate student success and performance measures over the 5 years of VU Block Model® have not diminished over time.

VU Commencing Bachelor student success and performance metrics in First Year College (FYC) units from 2017, the year immediately preceding the initial Block Model rollout, until mid-year 2023 reveal student success improvements have persisted for the domestic Commonwealth Supported Place (CSP) cohort in particular.

Domestic equity group student pass rates increased more under VU Block Model® than non-equity group pass rates, reducing the disadvantage factor that belonging to an equity group predicted; however, the performance of non-equity group students also lifted, and the mark differential between equity groups has not been removed, meaning equity groups students receive fewer High Distinction (HD) grades than non-equity group students.

Domestic and International student results are presented separately as cohort sizes and discipline mixes have changed over the reporting period. Results for some equity groups are reported here: Socio-Economic Status, First in Family, Non-English Speaking Background and Low/High ATAR Category.

Key results:

- Increases in student success measures were reported as VU Block Model® was introduced in 2018 into VU First Year College® (FYC) units, results that have persisted over time;
- Small uplifts in student performance in FYC units as refinements were made in 2019 and 2020;
- Smaller uplifts in student success can be seen as Block Model was rolled out into Bachelor units taken after first year;
- Results for equity groups (Socio-Economic Status, First in Family, Non-English Speaking Background and Low/High ATAR Category) show equity group students in first year units reported higher pass rates, closing the gap to non-equity group students;
- Equity group differentials in marks and grades remained, with equity group students receiving lower average marks, and few High Distinction (HD) grades than their non-equity group counterparts;

INTRODUCTION

Victoria University Block Model® was designed in 2017. Implementation started with first year units, then progressed sequentially to higher levels over time, with postgraduate coursework units coming last. Victoria University Block Model® was also adopted by VU's onshore delivery partner in Sydney and VU qualifications are being taught in VU Block Model® in partner institutions offshore.

Teaching began in first year Bachelor courses under the new model at the beginning of the academic year in 2018. Staff recruited to First Year College were highly engaged in the possibilities of teaching under the new model. The implementation was delivered using project management methodology selected as the best way to make such a major change.

It involved:

- Creation of the First Year College® (FYC) in 2017, a new academic division set up specifically to re-imagine learning and teaching in the first year of nearly all VU's undergraduate degrees;
- Establishment of the VU Block Model® as a change project under the leadership of DVC Academic and an experienced project manager, with a small team specifically supporting the project;
- Designing a new, research-informed pedagogy to change first year learning and teaching and improve outcomes for students making the transition into higher education study;
- Redesign of FYC units to match the new pedagogical model, where academics were supported by experienced learning designers and support staff to create the new units;
- Mandatory, consistent and supported use of VU's online learning platform, operating alongside face-to-face classes, giving ready access to learning materials to all students online;
- Establishment of Learning Hubs to support FYC students outside of class;
- A whole of university, collaborative approach between academic divisions and senior professional staff to support the change required;
- Use of Agile project methodology to plan, create and implement change, and to capture lessons learned and apply these in continuous improvement;
- Sequential rollout of VU Block Model® to units at higher year levels from 2018-2020, until nearly all VU's undergraduate units and courses were taught in VU Block Model®, also using project management methodology;
- Initial evaluation methodology planned before implementation, using a

set of comparable ‘before’ and ‘after’ first year units as the basis for comparison, applying normal student success metrics and benchmarks to measure and monitor outcomes;

- Creation of the Unit Health Dashboard, an online report on student performance metrics for every unit and study period to provide fast feedback that was expected to be used in continuous improvement;
- Creation of the Block Evaluation Dashboard, on online report displaying VU student pass rates, grade distribution, student survey results, with comparisons to key national benchmark data, able to be filtered to a number of attributes.;
- Creation of a Block Model Research Dataset, allowing VU researchers to access information to underpin academic research projects on the VU Block Model®;
- Subsequent design and implementation of VU Block Model® postgraduate courses and units in 2019 and 2020.

Equity Group Comparisons

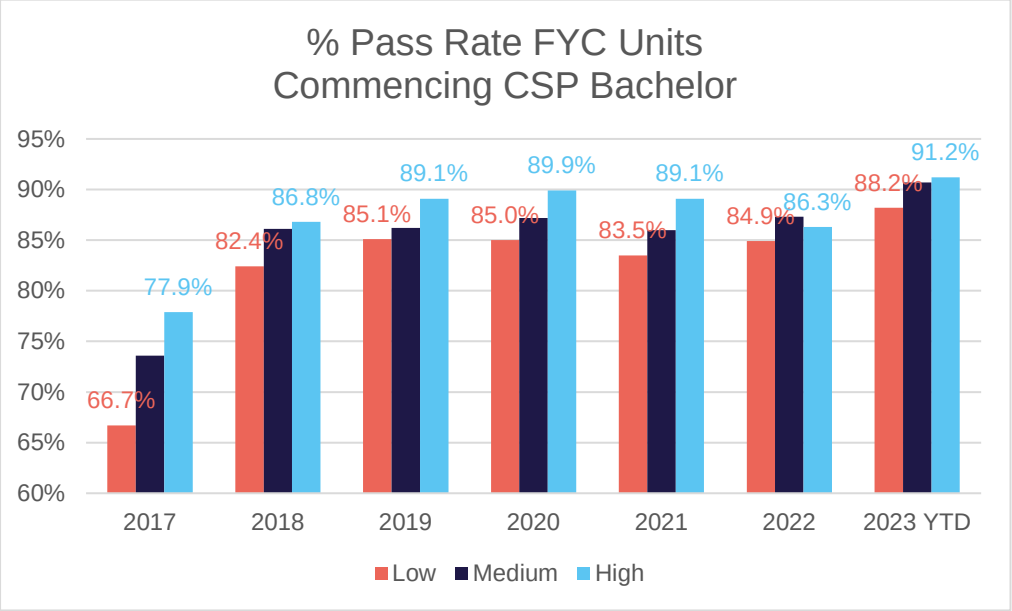
Socio-Economic Status (SES)

Early indicators of student success reported in *Evaluating VU's Block Model – January 2021* revealed VU Block Model® was able to improve pass rates for all Commencing CSP Bachelor enrolments in FYC units, no matter the socio-economic status of enrolled students. As international students have no SES indicator, only results of domestic students are shown.

Importantly, Figure 5 shows Block Model improved the success of Low SES students more than High SES students, diminishing the negative impact of Low SES on pass rates in First Year College units. Pre-Block differentials in pass rates between Low and High SES cohorts of more than 10 percentage points were halved, and this differential has generally been maintained.

In other words, while VU Block Model® did not remove equity disadvantage entirely, it did remove large gaps in Pass Rates between SES equity cohorts.

Figure 5. CSP Bachelor Pass Rates by Socio-Economic Status, FYC units



Average mark for this same cohort is reported in Figure 6. This shows that all SES groups followed similar patterns, with High SES student enrolments recording higher average marks while Low SES student enrolments returned lower marks. High pass rates recorded for the first half of 2023 appear to be an anomaly but may decline as second half unit results are added to the mix, something to monitor

Figure 6. Average Mark for CSP Commencing Bachelor Cohort in Passed Units by SES, FYC units

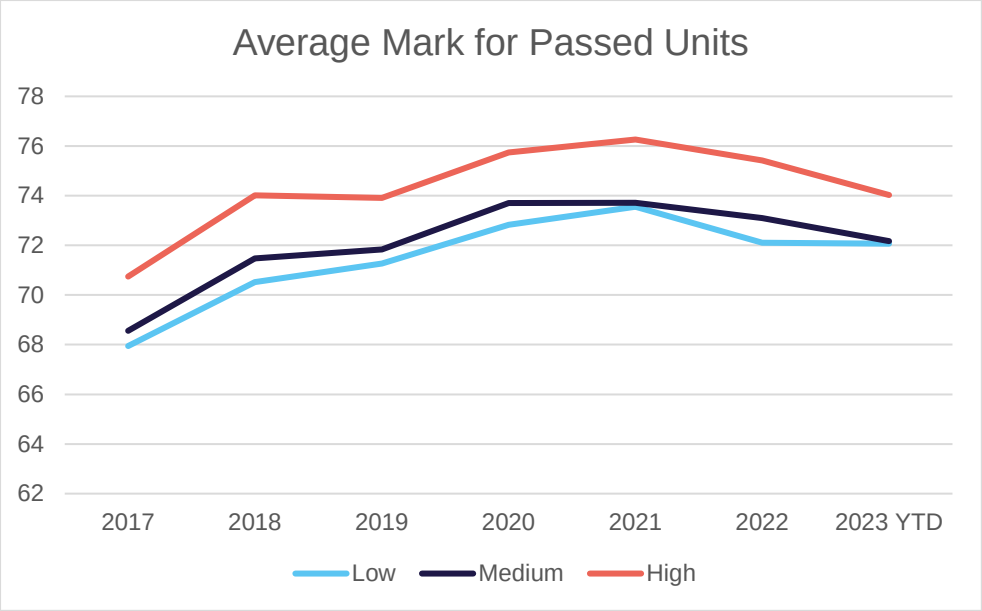
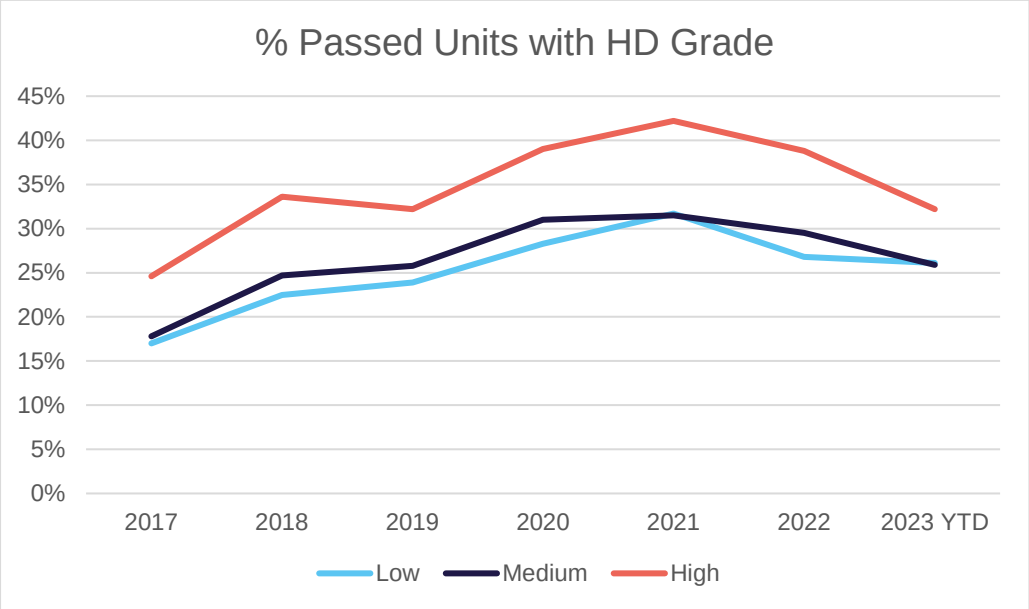


Figure 6. Grades (% HD) for CSP Commencing Bachelor Cohort in Passed Units by SES, FYC units



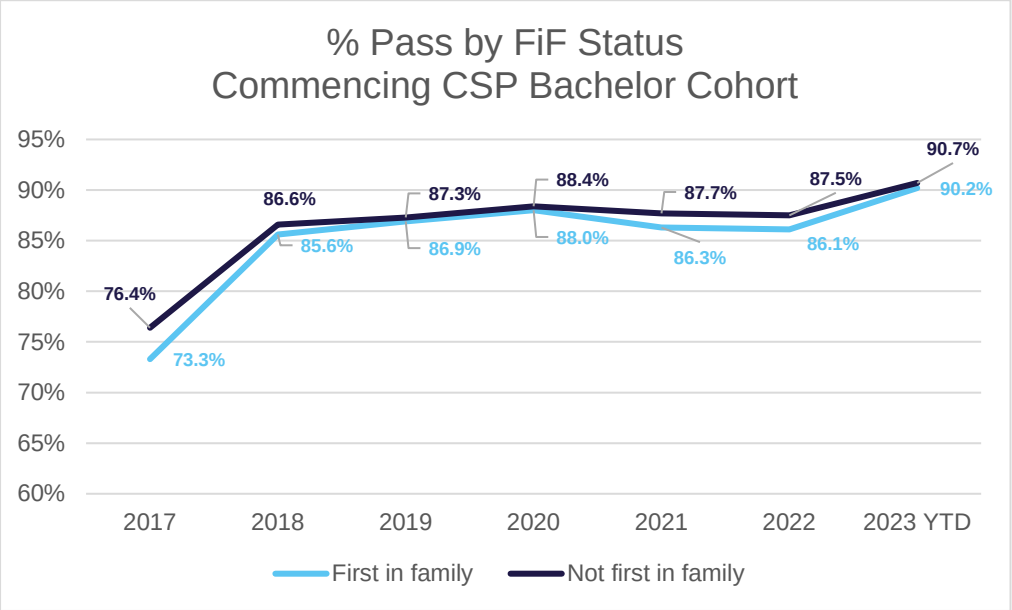
These results reveal that while more Low SES students continue to pass their FYC units (Figure 5) in VU Block Model®, with Pass Rates of all SES cohorts improving and the Low SES disadvantage diminished. However, High SES students continue to maintain a premium

mark over Low SES students (Figure 5) and receive more HD grades (Figure 6) as a result of higher marks.

First in Family (FiF)

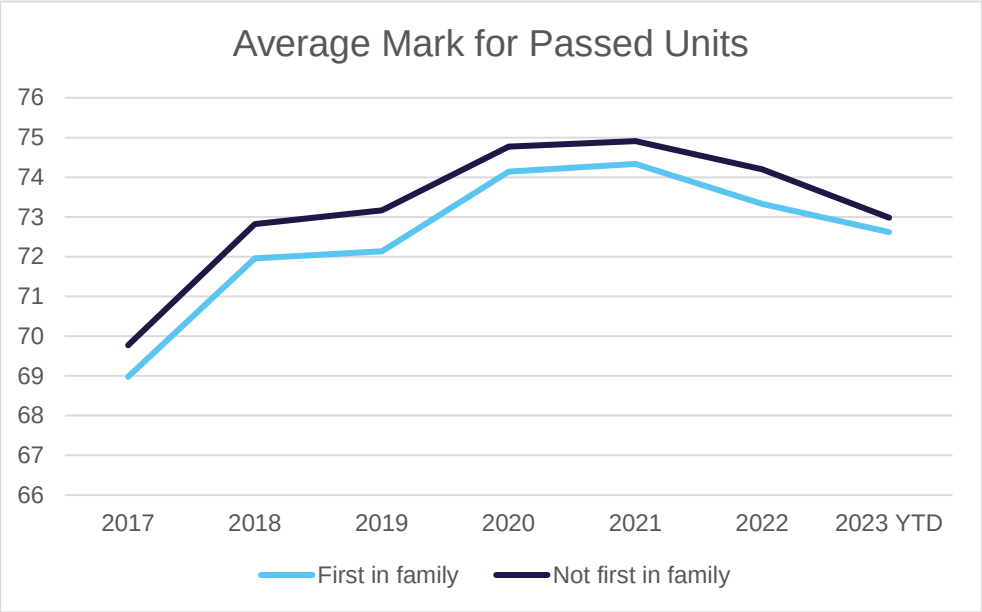
Early indications showed VU Block Model® was able to remove the disadvantage First in Family students encountered in their first year of Bachelor study. Pass Rates over time show the gap closed following the introduction of Block Model and has remained relatively small since.

Figure 7. Commencing CSP Bachelor Pass Rates by First in Family Status, FYC units



As with SES, average marks for the Commencing Bachelor FiF cohort in FYC units (Figure 8) are lower than for those Not FiF, and this gap appears steady over time.

Figure 8. Commencing CSP Bachelor Average Mark by First in Family Status, FYC units



Non-English Speaking Background (NESB)

Earlier evaluations showed that VU Block Model® was able to reduce the disadvantage gap in Pass Rates between those reporting as NESB when compared to those who speak English only. Figure 9 shows before Block Model introduction in 2017, the gap for the Commencing CSP Bachelor cohort was large, nearly 10 percentage points. This gap reduced in 2018 and 2019, the pre-Covid years, then widened again in 2020 and 2021, the Covid lockdown years. It is not surprising that NESB cohorts struggled more during the rapid pivot to online learning during Covid-19 than their English-speaking classmates. Results for this cohort lifted only slightly in 2022 and appear to have improved in 2023 as campuses re-opened and face-to-face teaching resumed.

Figure 9. Commencing CSP Bachelor Pass Rates by NESB Status, FYC units

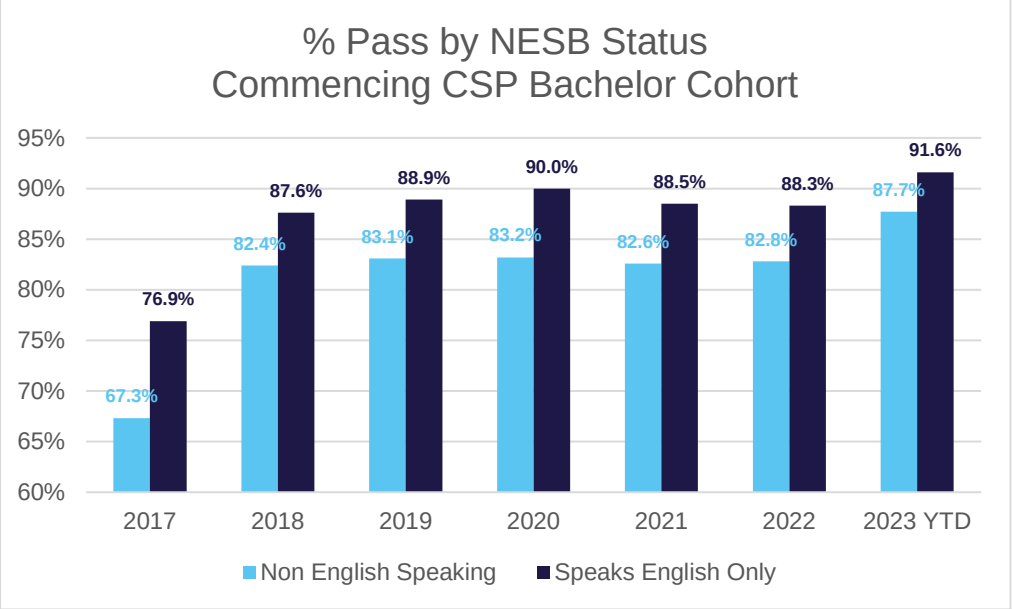
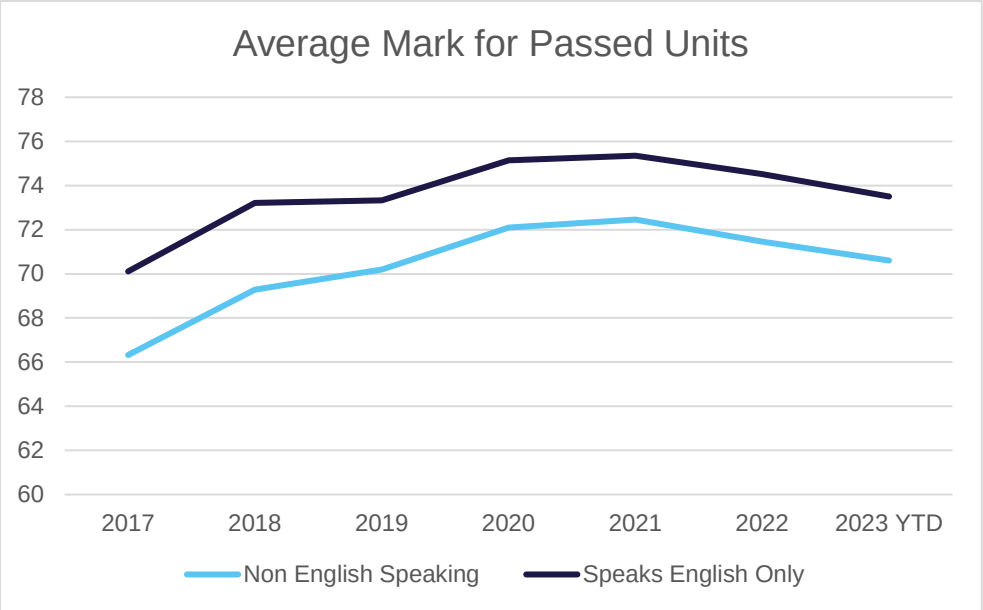


Figure 10. Commencing CSP Bachelor Average Marks by NESB Status, FYC units

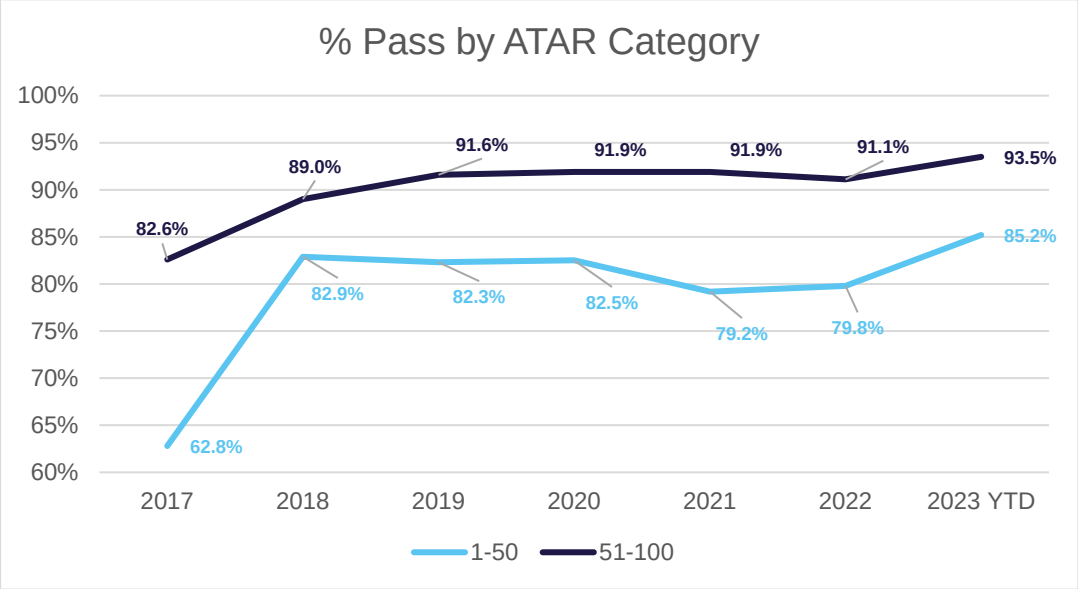


As with SES and FiF, while more NESB Commencing CSP Bachelor equity group students passed more units (Figure 9), the Average Mark differential (Figure 10) persists, a differential that results in fewer HD grades for this group.

ATAR Category

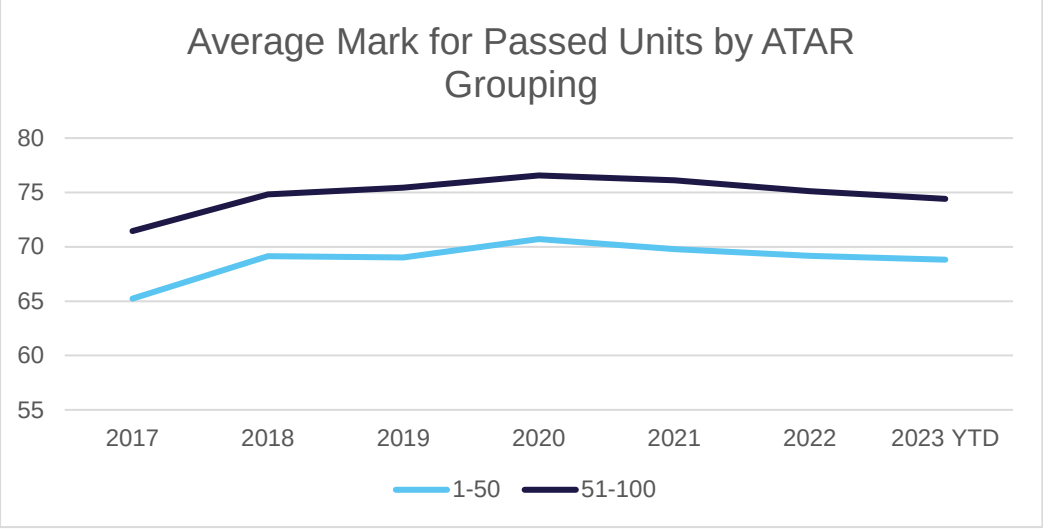
Early evaluation of VU Block Model® included ATAR category and showed that the pre-Block Model FYC Pass Rate gap between Commencing CSP Bachelor students with a reported ATAR of 1-50 and those with 51-100 closed significantly. Over time, this smaller gap has been retained (Figure 11), with a larger gap opening again in 2021 and 2022, followed by early signs of a return to 2018 and 2019 differentials from 2023 results at the mid-year mark.

Figure 11. Commencing CSP Bachelor Pass Rates by ATAR Category, FYC units



As with other equity groups, Figure 12 shows that the gap in average marks of passed units for the 1-50 and 51-100 ATAR groups recorded pre-Block Model has persisted over time.

Figure 12. Commencing CSP Bachelor Average Marks by ATAR Category, FYC units

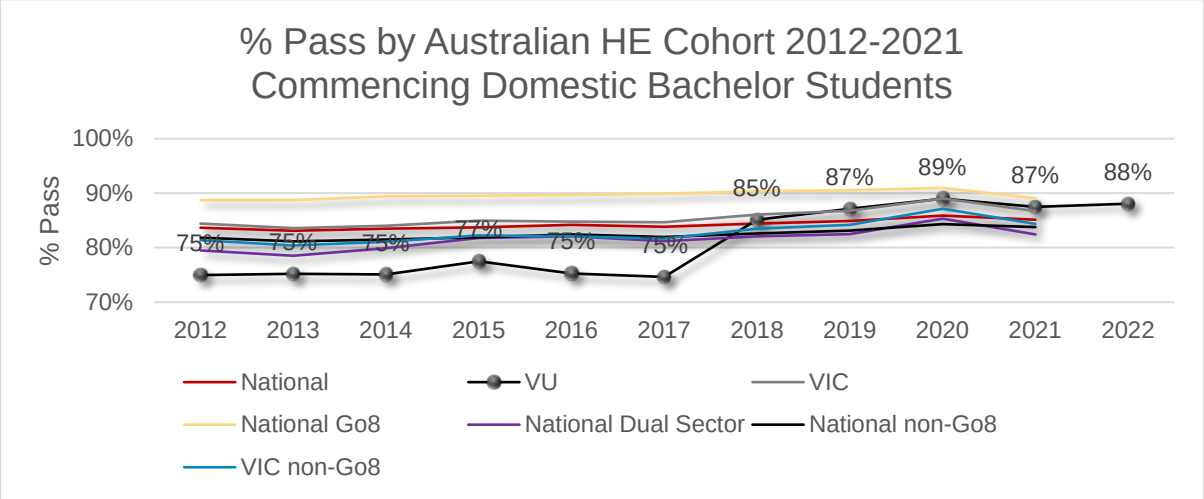


Commencing Bachelor Results Summary

Five years on from the introduction of VU Block Model®, results of Commencing Bachelor students enrolled in First Year College units have accumulated the most data relating to student success.

Results reveal student success improvements in Block Model come from lifting and sustaining higher Pass Rates in the first year of Bachelor study. This impact has persisted over time for the CSP Domestic and Onshore International Melbourne cohorts. Even with the pace of learning in Block Model, studying one unit at a time in an intensive mode, coupled with formative, interactive learning activities and assessment throughout the study period means Commencing Bachelor students pass more units in their first year of study. Figure 13 shows the impact of the 2018 implementation of VU Block Model® on VU Commencing Domestic Bachelor students' Pass Rates compared to other groups, including national averages, Go8/non-Go8, Dual Sector institutions, and Victorian State university averages.

Figure 13. Commencing Domestic CSP Bachelor Pass Rates, VU vs Competitors



Within the CSP Domestic Bachelor cohort, both equity and non-equity cohorts achieved improved Pass Rates, with the gap between them reduced. However, VU Block Model® does not remove the differential in average mark for passed units between equity cohorts and their non-equity classmates in FYC units. This differential in marks is consistent, with the gap smallest for the First in Family cohort, and larger for other equity cohorts.

This gap will potentially limit the ability of Low SES, Non-English Speaking Background and Low ATAR students to be admitted into competitive postgraduate programs, and underlines the importance of equity considerations in selection processes.

ATTACHMENT 2:

The Economics of the VU Block Model®

1. More students graduate, and graduate sooner, under the VU Block Model

Table 1 shows the numbers of students who complete their degrees after different periods of time, based on an intake of 1000 students. Because of the higher pass rates for academic units under the VU Block Model, fewer students need to repeat subjects. This means students complete their degrees more quickly.

Table 1: *Students complete more quickly under the VU Block Model*

	Semester System	VU Block Model System
Intake	1000	1000
First year drop outs	203	152
Graduate on-time	0	6
Complete after one extra semester	125	633
Complete after two extra semesters	381	199
Complete after three extra semesters	232	9

Source: *Binomial calculation, each unit considered independent*

For example, after one additional semester (up to four units repeated), almost 75 per cent of students following the Block model would have completed their degrees. By contrast, less than 20 per cent of the students following a semester program would have completed (see **Table 1**). More students graduate with the lower attrition rate. Thus of 1000 commencing students, some 847 students would complete under the VU Block Model, compared to just 797 under the semester model. This is an increase of 6.3 per cent.

2. Better pass rates reduce University revenue

Since universities are funded by EFTSL, the VU Block Model's impact on EFTSL numbers has funding implications. Using this data based on 1000 students, the University EFTSL and funding would fall by 6.5 per cent (**Table 2**).

Table 2: *Taught EFTSL and University income falls by 6.5 per cent under the VU Block*

	Semester EFTSL	VU Block Model EFTSL
First year enrolment (1000 x 8 units)	8000	8000
Second year enrolment (after drop-outs x 8)	6376	6784
Third year enrolment (no extra drop-outs)	6376	6784
At least one extra unit	737	833

	Semester EFTSL	VU Block Model EFTSL
At least two extra units	730	689
At least three extra units	712	521
At least four extra units	675	345
At least five extra units	613	200
At least six extra units	529	102
At least seven extra units	430	44
At least eight extra units	328	14
At least nine extra units	232	1
At least ten extra units	150	
At least eleven extra units	85	
At least twelve extra units	35	
Total EFTSL	**26008**	**24317**

3. Cost per EFTSL or cost per graduate?

The VU Block Model system produces more graduates more quickly than the semester system. More graduates and higher pass rates reduce the cost per graduate by 18.5 per cent (see **Table 3**).

Table 3: *University revenue (cost to Government) after nine semesters*

	Semester System	VU Block Model System
Graduates	738	847
EFTSL taught	26008	24317
Total revenue (cost)	$39m	$36.5m
Revenue per EFTSL	$1500	$1500
Revenue per graduate	$52,861	$43,064

Note: *Revenue is taken to be $1500 per EFTSL*

4. Student gain: more graduate and graduate earlier

The fact that more VU Block Model students complete their degrees, and they complete them earlier than semester-based students, means that they generate more earnings.

We assume a starting salary of $64,000 and assume people move into work immediately. (Note: changing either of these assumptions impacts graduates of both the VU Block Model and semester systems similarly).

By this calculation, the 1000 VU Block Model students who entered and graduated, will have earned nearly three times as much ($58m vs $20m) as semester students, 4.5 years after first entering university (see **Table 4**).

Table 4: Cumulative earnings of graduates 4.5 years after first enrolling

	Semester System	Amount Earned 4.5 years after enrolling	VU Block Model System	Amount Earned 4.5 years after enrolling
Graduate on time	0	0	6	576,000
One extra block		0	144	12,672,000
Two extra blocks		0	168	13,440,000
Three extra blocks		0	176	12,672,000
Four extra blocks/extra semester	125	8,000,000	145	9,280,000
Five extra blocks			98	5,488,000
Six extra blocks			58	2,784,000
Seven extra blocks			30	1,200,000
Eight extra blocks/extra semester	381	12,192,000	14	448,000
Nine extra blocks			1	24,000
Ten extra blocks			0	0
Eleven extra blocks			0	0
Twelve extra blocks/extra semester	232	0	0	0
Cumulative earnings by 4.5 years		20,192,000		58,548,000

Source: *Derived from Table 2 data; taking $64,000 as the annual salary and assuming people move into work immediately*.

5. Government benefits

Government benefits from the VU Block Model in multiple ways:

- Higher graduate earnings mean earlier repayment of HECS-HELP.
- Lower HECS debt overhang.
- Higher graduate earnings increase taxation revenue.

Seven semesters after first enrolment, 75 per cent of the VU Block Model students will start paying back some of their HECS debt. Only 15 per cent of the Semester students will.

Because the median VU Block Model student graduates after seven semesters, and the median semester student graduates after eight semesters, VU Block Model students graduate with smaller HECS debts.

With individuals earning $64,000 paying about $9,000 per year in income taxes, the income tax revenue earned by the government rises from $2.8m under the semester system to $8.2m under the VU Block Model.