

FROM MATRIC INTO AND THROUGH UNIVERSITY

University access and success for the 2008 National Matric cohort

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Project background

Project context and research outputs

- ▶ Part of Labour Market Intelligence Project (LMIP)
 - ▶ *'Pathways through education and training and into the workplace'*
- ▶ Forthcoming LMIP book chapter (est. 2018)
- ▶ Working papers almost available...:
LMIP: <http://www.lmip.org.za/lmippublications>
- ▶ Working papers available:
US: <http://www.ekon.sun.ac.za/wpapers/>
IZA: <http://ftp.iza.org/dp10358.pdf>

Context

Why?

- ▶ Relatively few graduates in SA's skills-shortage context
 - ▶ < 9% of youth have tertiary education; only 4% have degrees
- ▶ Low university access (GER < 20%) + weak university throughput
- ▶ Lack of data undermines understanding of these phenomena
- ▶ No integration of school and university data \Rightarrow limited understanding
 - ▶ transition from secondary school into and through university
 - ▶ how secondary schooling outcomes influence university outcomes.
- ▶ *But now...*

Context

How?

- ▶ Nationally representative, integrated, longitudinal administrative dataset on matric learners and public university students¹
 - ▶ explicitly links unit-record data on NSC examinations and school characteristics with public university enrolments and graduations at the national level
- ▶ Makes it possible to “track” learners from matric into and through university
- ▶ Allows detailed, nationally representative quantitative analysis of
 - ▶ transitions from school to university (access)
 - ▶ how matric results, demographics, and school background influence university outcomes (correlates)
 - ▶ how students progress through the public university system (completion & dropout)

¹ Acknowledgements: DBE and DHET (Kirsten Barth) for the data linking, anonymisation, and provision.

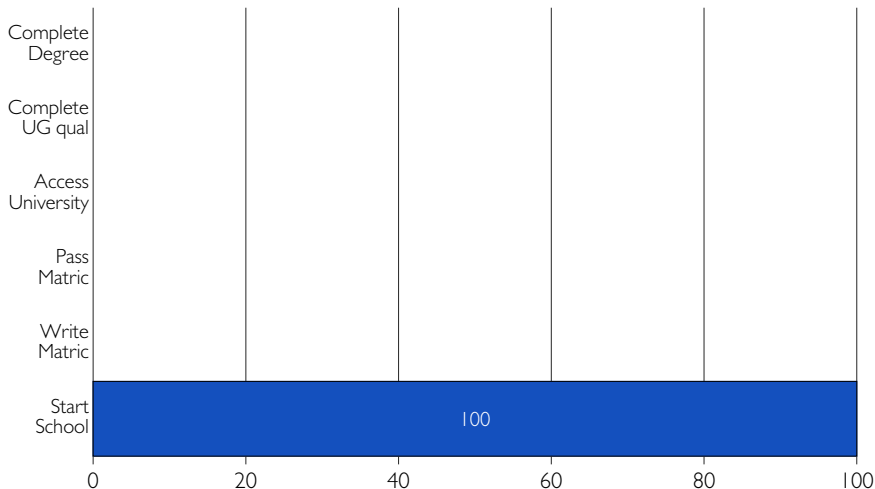
Context

What?

- ▶ Use integrated 2008 NSC and 2009 - 2014 HEMIS data to
 - ▶ examine university access, entrance, completion, and exit patterns
 - ▶ over a six year period (2009 - 2014)
 - ▶ for all learners who wrote the 2008 NSC exams

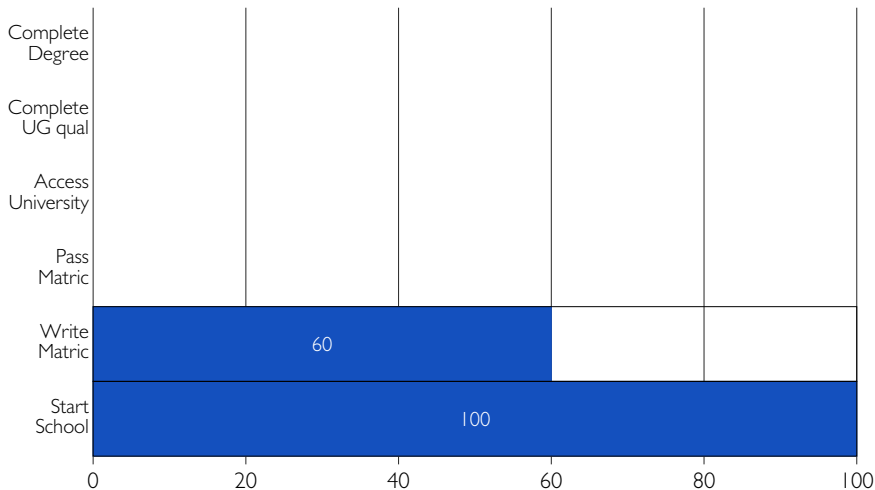
Why does SA have so few graduates?

4 major bottlenecks on the path to getting a university qualification



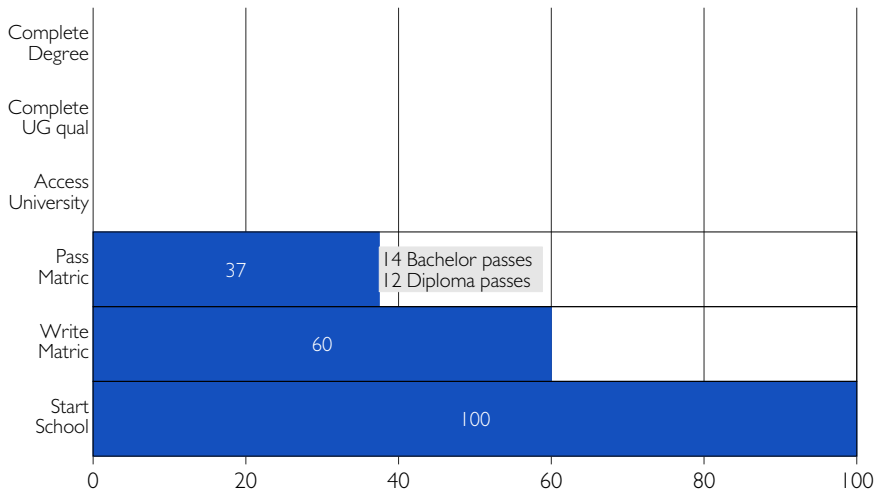
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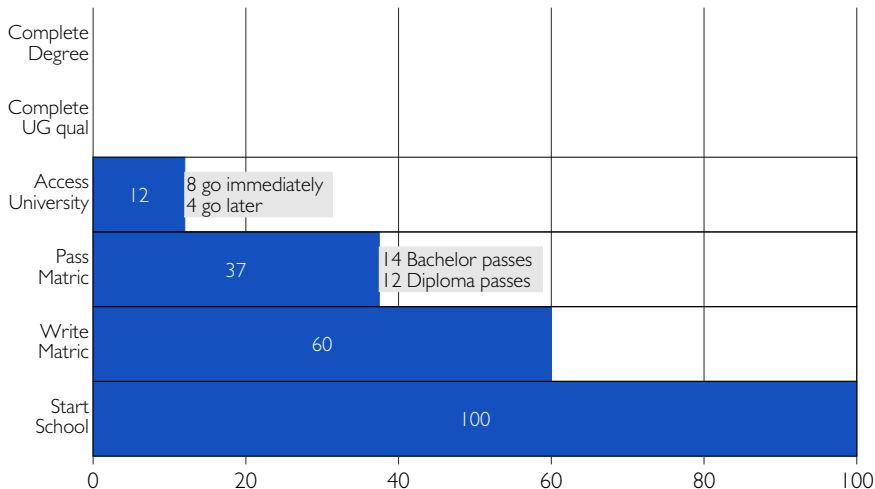
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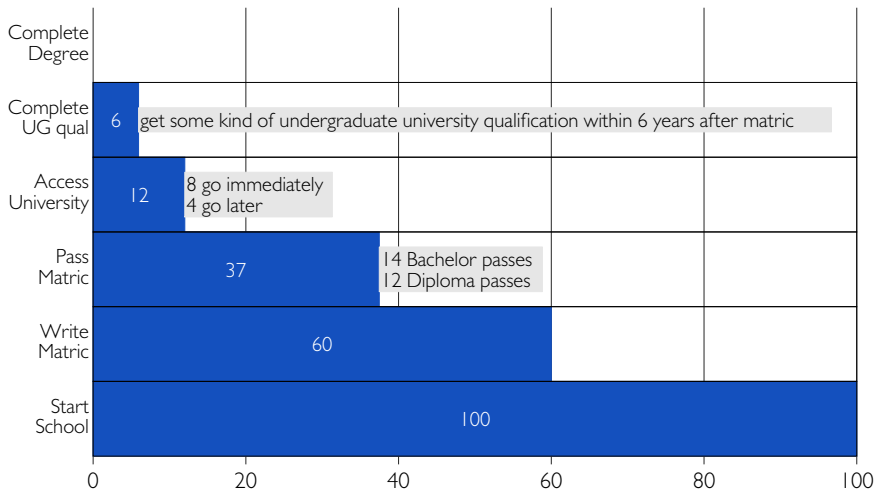
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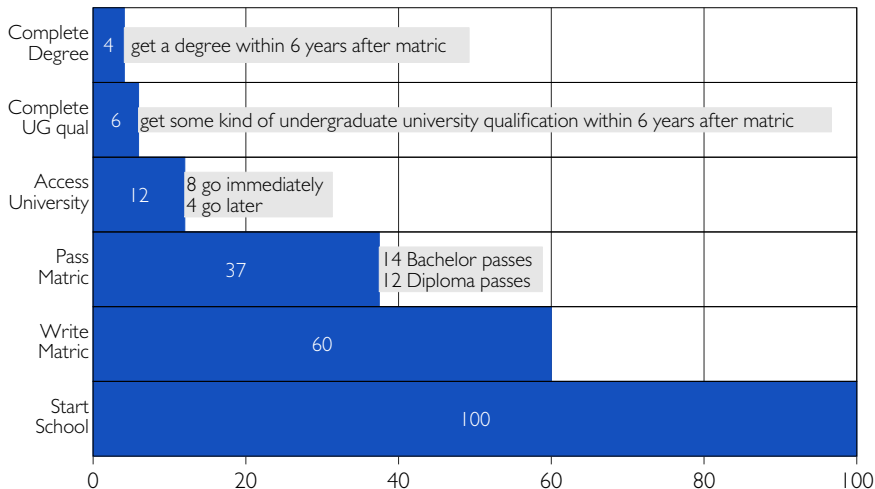
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Why does SA have so few graduates?

4 major bottlenecks on the path to getting a university qualification



Measuring university outcomes for the 2008 NSC cohort

4 Outcomes metrics: access, completion, dropout, and conversion rates

▶ t -year access rate = $\left[\left(\sum_{i=1}^t \text{FTEN}_{2008+i} \right) \middle| \text{NSC}_{2008} \right] / \text{NSC}_{2008}$

▶ t -year completion rate = $\left[\left(\sum_{i=1}^t \text{FTC}_{2008+i} \right) \middle| \text{FTEN}_{2009}, \text{NSC}_{2008} \right] / \text{FTEN}_{2009}$

▶ t -year dropout rate = $\left[\left(\sum_{i=1}^t D_{2008+i} \right) \middle| \text{FTEN}_{2009}, \text{NSC}_{2008} \right] / \text{FTEN}_{2009}$

▶ t -year conversion rate = $\left[\left(\sum_{i=1}^t \text{FTC}_{2008+i} \right) \middle| \text{NSC}_{2008} \right] / \text{NSC}_{2008}$

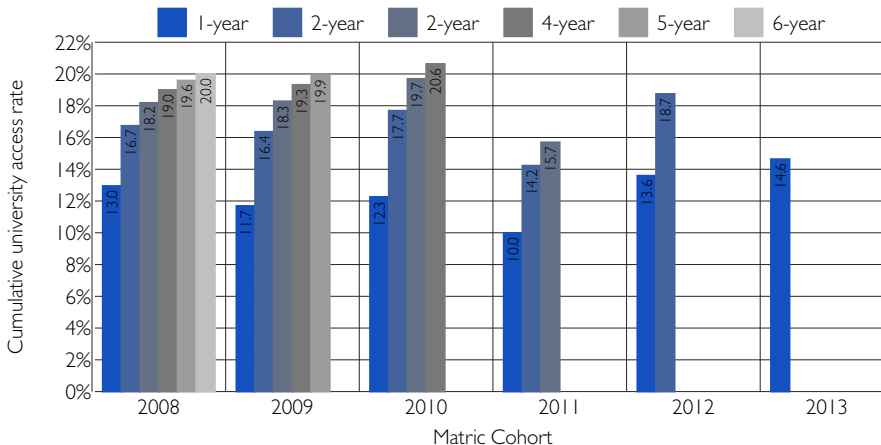
University outcomes for the 2008 NSC cohort

One to six year access, completion, dropout, and retention rates for the

	1 year (2009)	2 years (2010)	3 years (2011)	4 years (2012)	5 years (2013)	6 years (2014)
Access rate	12.9	16.7	18.2	19.0	19.6	20.0
Completion rate	0.2	0.5	15.4	36.9	50.3	58.1
Dropout rate	9.2	14.5	19.2	23.4	28.4	—
Retention rate	85.6	80.4	60.9	36.9	21.1	—

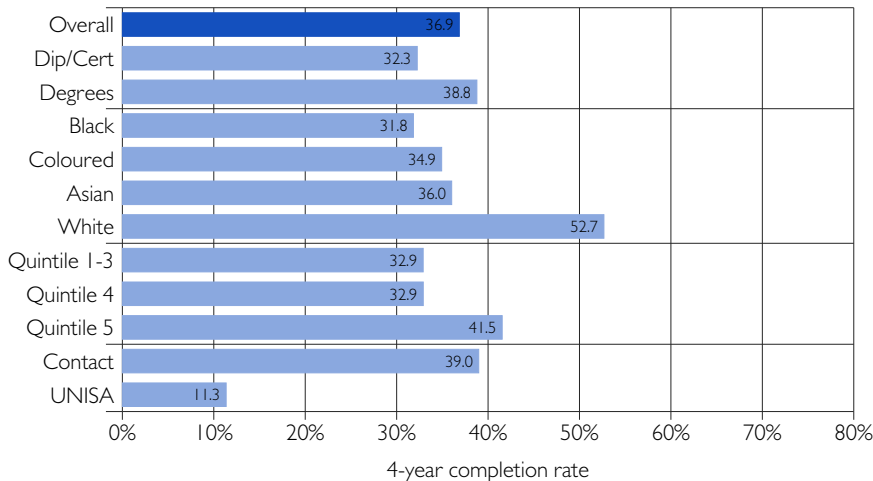
Delayed university entry is significant and persistent

One to six year access rates for the 2008 to 2013 matric cohorts



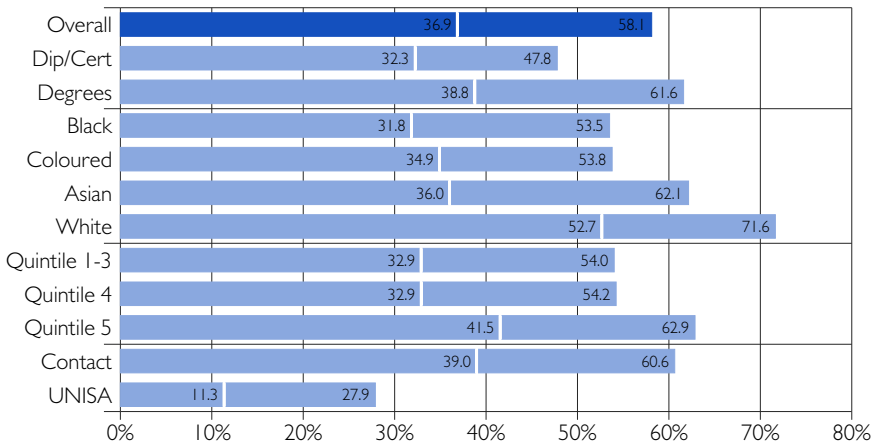
Students take long to graduate - if at all

4 vs 6-year completion rates for the 2008 matric cohort



Students take long to graduate - if at all

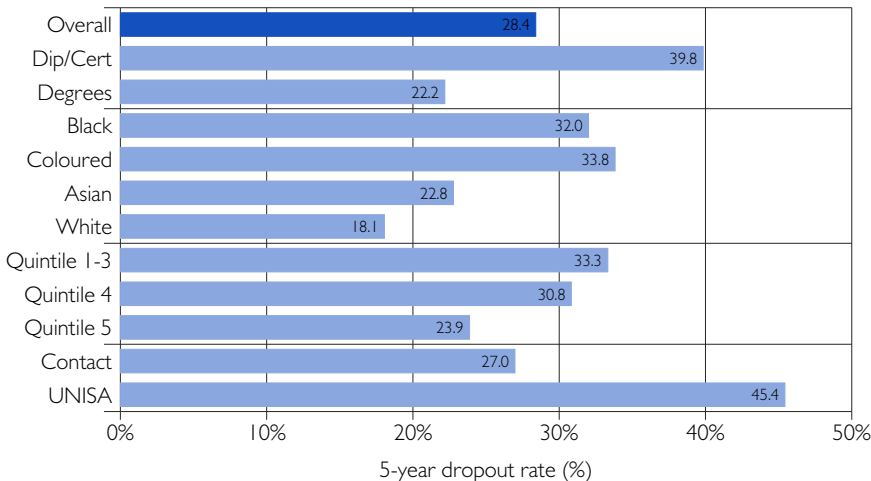
4 vs 6-year completion rates for the 2008 matric cohort



4-year vs 6-year completion rate

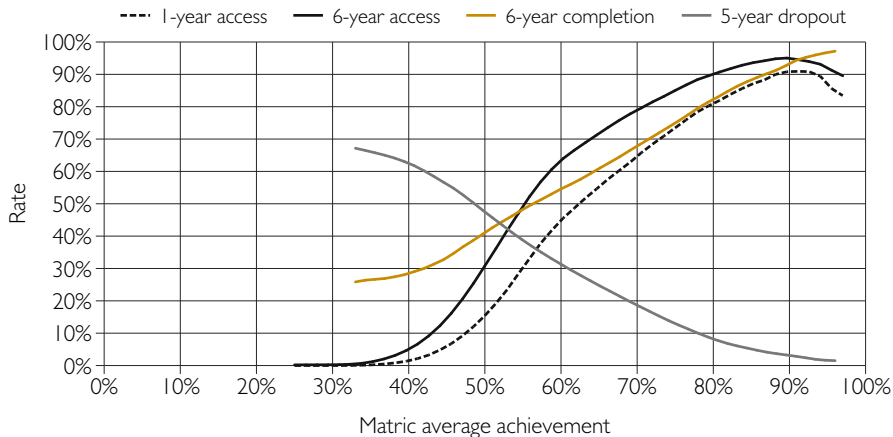
University dropout is high, but not as high as often claimed*

5-year dropout rates for the 2008 matric cohort



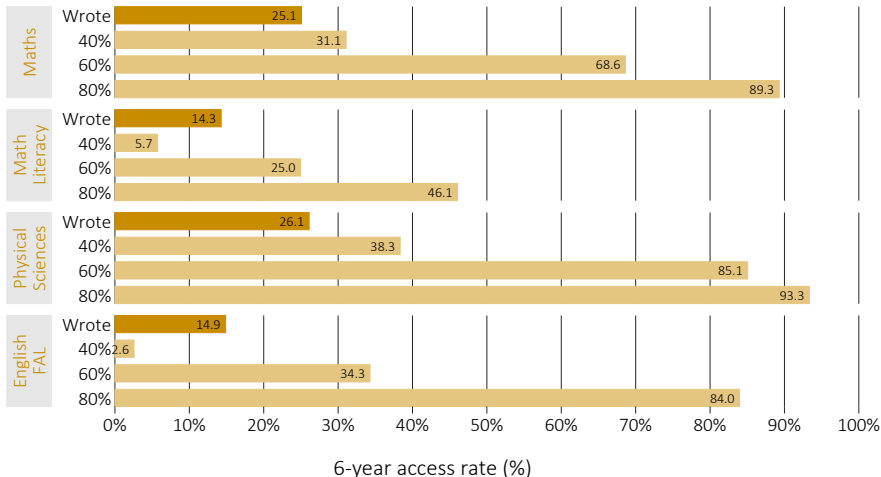
Matric performance really matters for university outcomes

Matric average and university access, completion, and dropout



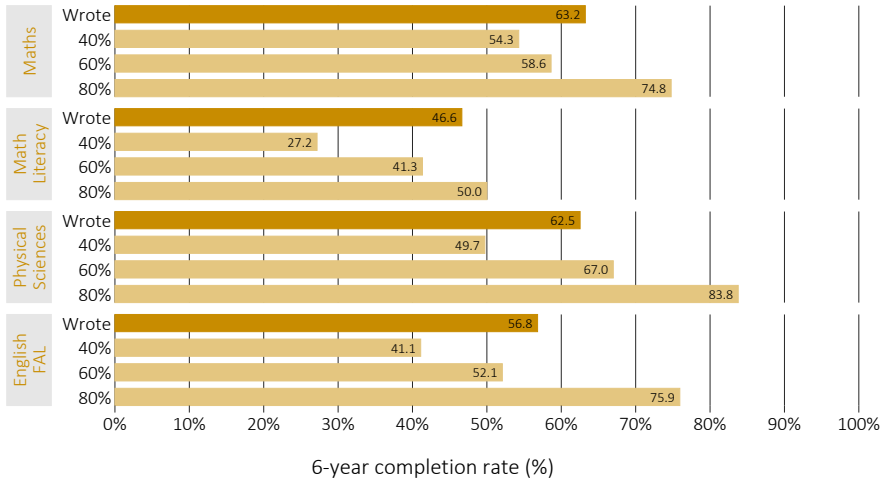
Gateway subjects really matter for university access

Gateway subject participation and performance vs university access



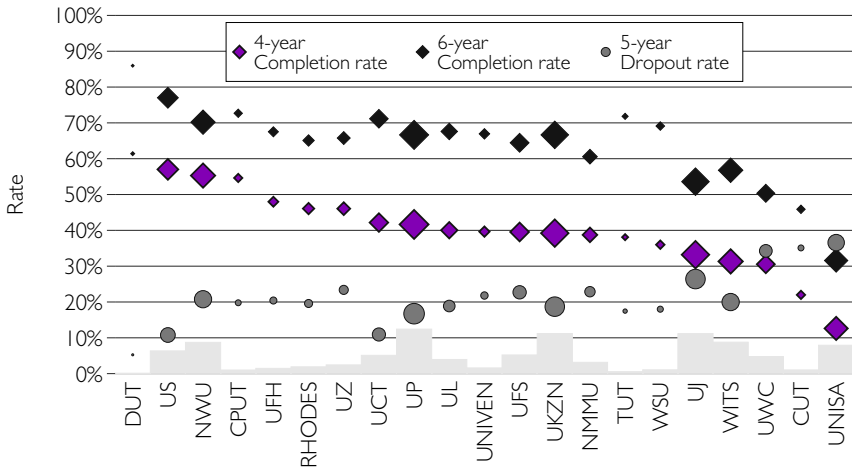
Gateway subjects also matter for programme completion

Gateway subject participation and performance vs university completion



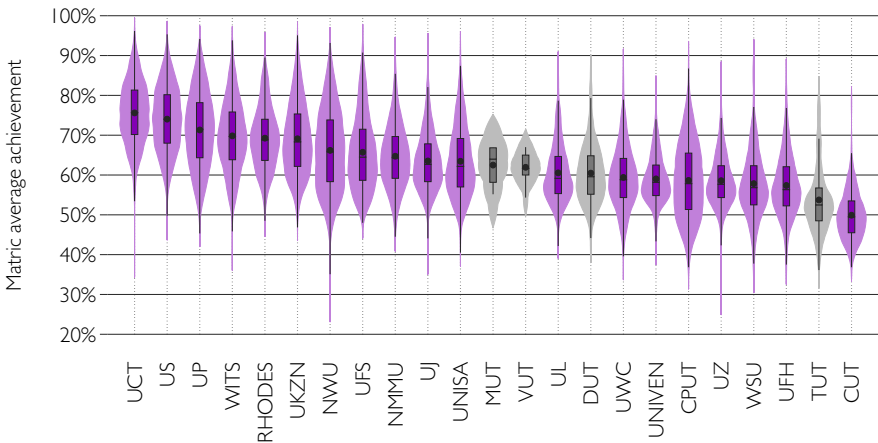
Big differences in outcomes across universities

Completion and dropout rates for the 2008 matric cohort, by university (2009 FTEN degrees)



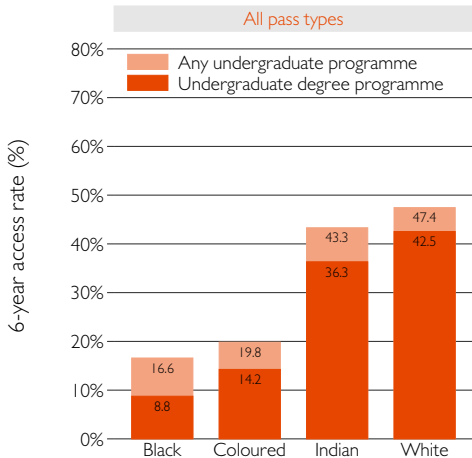
Huge differences in matric performance across universities

Matric average achievement distributions for the 2008 matric cohort, by university (2009 FTEN degrees)



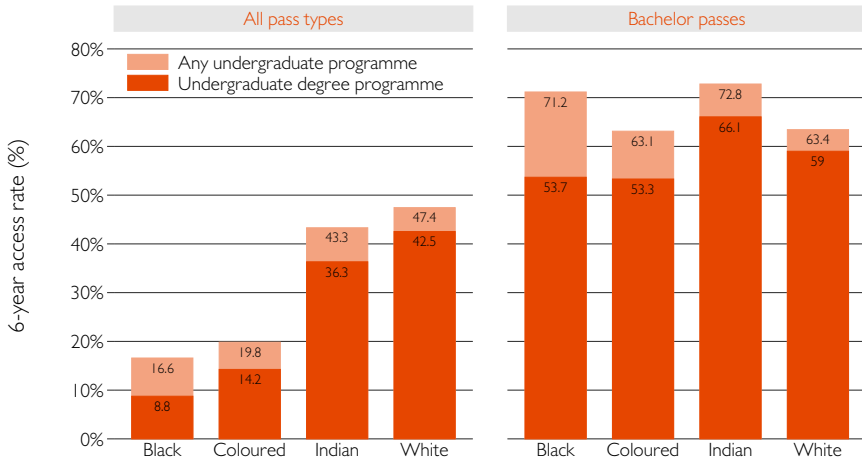
Differentials in university access

University access rates by race group - all candidates



Differentials in university access

University access rates by race group - all candidates vs Bachelor pass candidates



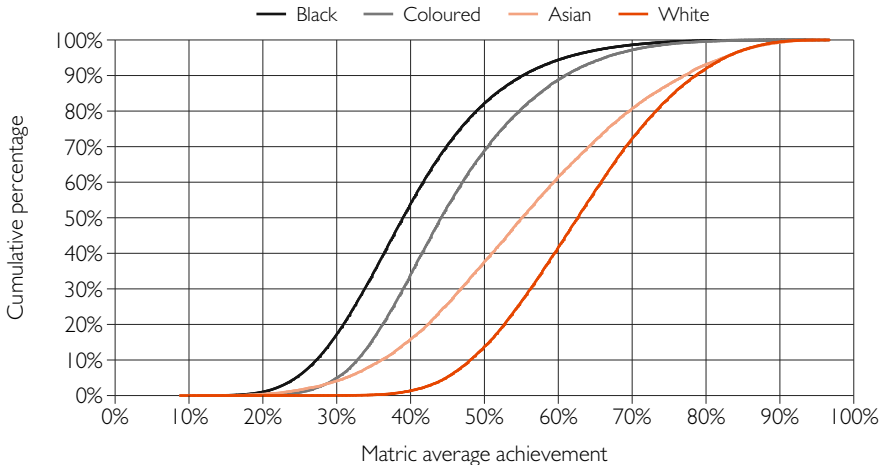
Differentials in university throughput

Completion and dropout for the 2008 NSC cohort (2009 FTEN only), by race and programme type

	<i>(All undergraduate)</i>			<i>(Undergraduate degree)</i>		
	4-year C	6-year C	5-year D	4-year C	6-year C	5-year D
Black African	31.8	53.5	32.0	31.7	55.8	24.0
Coloured	34.9	53.8	33.8	34.1	54.8	29.6
Indian/Asian	36.0	62.1	22.8	36.8	63.7	18.9
White	52.7	71.6	18.1	52.7	72.3	16.2

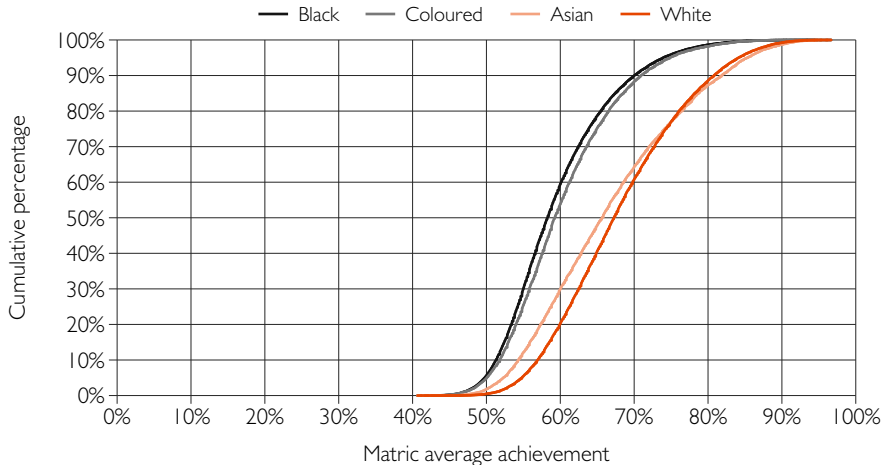
Reality: significant matric performance differentials

Cumulative matric average achievement distribution for the 2008 matric cohort



Reality: significant matric performance differentials

Cumulative matric average achievement distribution for the 2008 matric cohort - Bachelor passes only



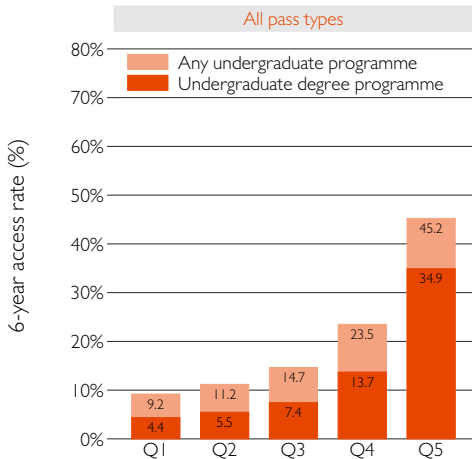
Conditional differentials in university outcomes

Undergraduate access, completion, conversion, and dropout rates - with controls

	Acc1	Acc6	Com4	Com6	Drop5	Conv6
<i>(All undergraduate programmes)</i>						
Coloured	-5.1***	-9.6***	-3.0***	-6.1***	7.9***	-4.5***
Indian/Asian	-4.5***	-12.8***	-5.4***	-6.4***	7.5***	-5.7***
White	-15.3***	-19.9***	8.0***	0.2	4.3***	-7.4***
<i>(Undergraduate degree programmes only)</i>						
Coloured	0.5***	0.3*	-0.5	-2.6***	6.7***	-0.1
Indian/Asian	3.2***	0.7**	-0.7	-1.1	3.9***	0.9***
White	-3.4***	-2.7***	11.6***	4.7***	2.7***	1.3***

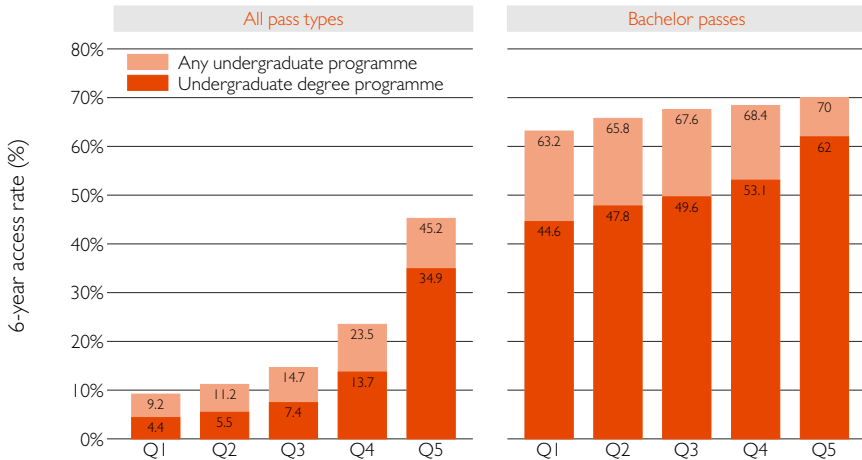
Differentials in university access

University access rates by school quintile - all candidates



Differentials in university access

University access rates by school quintile - all candidates vs Bachelor pass candidates



Differentials in university throughput

Completion and dropout for the 2008 NSC cohort (2009 FTEN only), by quintile and programme type

	<i>(All undergraduate)</i>			<i>(Undergraduate degree)</i>		
	4-year C	6-year C	5-year D	4-year C	6-year C	5-year D
Quintile 1	34.8	55.5	32.2	36.5	59.5	24.2
Quintile 2	32.8	55.7	31.7	34.0	59.2	22.6
Quintile 3	32.1	52.3	34.9	32.6	55.5	26.5
Quintile 4	32.9	54.2	30.8	33.4	56.7	23.7
Quintile 5	41.5	62.9	23.9	42.8	65.1	19.4

Conditional differentials in university outcomes

Undergraduate access, completion, conversion, and dropout rates - with controls

	Acc1	Acc6	Com4	Com6	Drop5	Conv6
<i>(All undergraduate programmes)</i>						
Quintile 2	-0.2**	-0.1	-2.6***	-1.1	0.9	-0.3***
Quintile 3	0.6***	0.7***	-4.8***	-5.4***	4.7***	-0.5***
Quintile 4	2.6***	3.0***	-8.0***	-7.1***	3.4***	-0.1
Quintile 5	6.2***	5.6***	-8.4***	-6.7***	2.6***	0.7***
<i>(Undergraduate degree programmes only)</i>						
Quintile 2	-0.4***	-0.3***	-4.1***	-2.2	0.6	-0.4***
Quintile 3	0.4***	-0.5***	-7.2***	-7.2***	5.0***	-0.7***
Quintile 4	0.0	-0.5***	-12.0***	-10.9***	4.0***	-1.3***
Quintile 5	3.1***	1.9***	-11.6***	-9.7***	3.3***	0.3**

Main insights

Important new or reaffirmed findings

1. Very few matriculants obtain university qualifications - even fewer obtain degrees
2. Nearly $1/3$ of *Bachelor passers* never go to university
3. Many matrics who go to university only do so two or more years after finishing school
4. Many students take a long time to complete university qualifications or do not complete at all
5. Significant inequalities in university outcomes between race and socio-economic groups remain evident
6. BUT (NB) much of these differentials appear to be the result of school achievement differentials
7. Students from less advantaged backgrounds who perform well in matric may face relatively good university outcomes - small, but growing group

Thank you
Comment & questions