Broadening Indigenous participation across the disciplines:

Australian Council of Deans of Science
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Co-Chair
Aboriginal and Torres Strait Islander
Higher Education Advisory Council

Aboriginal and Torres Strait Islander Higher Education Advisory Council

ATSIHEAC policy development framework

1. Broadening access across the disciplines
2. Whole of University Strategy
3. Academic Workforce
4. Sustainable financing
5. System level performance monitoring

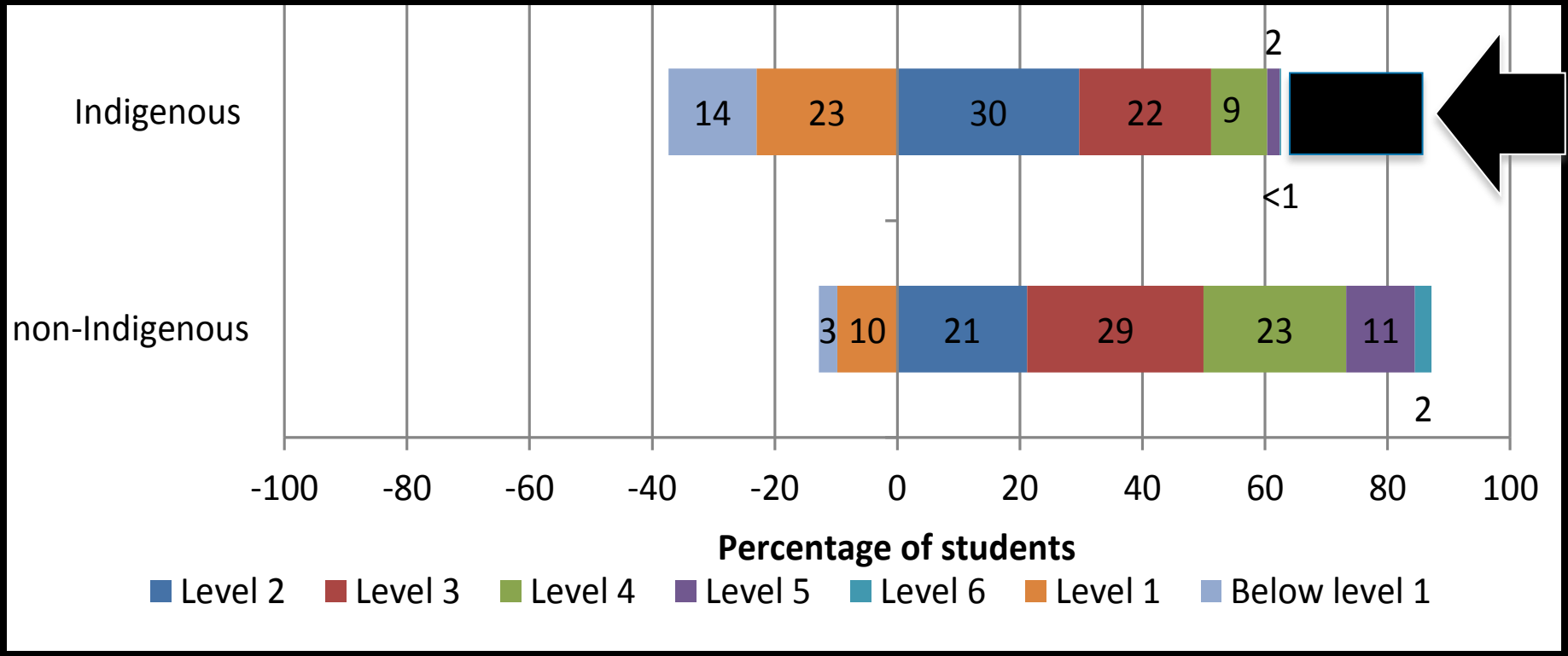
Broadening participation across the disciplines

- 11% of Indigenous people are employed in professional occupations, compared to 20% of non-Indigenous people

- Most common occupation group for employed people:
  - For Indigenous people - Labourer (24%)
  - For non-Indigenous people - Professional (20%)

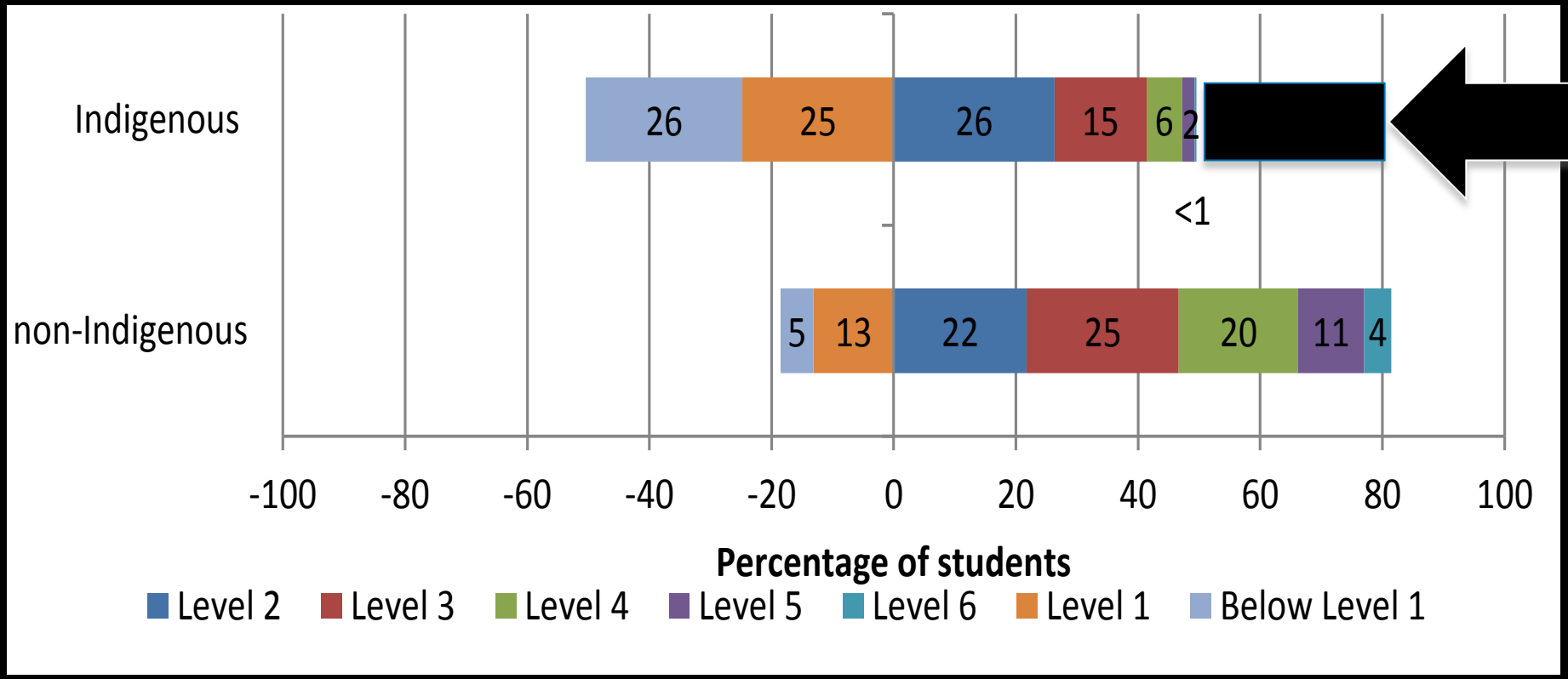
Drawn from Census data 2006 and 2011

PISA 2012 science literacy proficiency



Source: Thomson, S. et al 2014, Indigenous Student Performance on Standardised Tests, (draft report to ATSIHEAC)

PISA 2012 mathematical literacy proficiency



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Science Literacy and Science Interest

Retrospective analysis of PISA 2006 (McConney et al 2011):

- Indigenous science literacy lags non-Indigenous literacy by about 83.5 points (0.76 standard deviation units)
- Indigenous science interest led that of non-Indigenous students by 10 points (0.1 SD)
- Regression modelling: Reading Literacy accounted for 62 per cent of science literacy variance

Implications for schools

- There is a gap in achievement (science literacy)
- The gap is not a result of lower interest in science but instead mainly associated with reading literacy
- Use interest in science to improve reading literacy
  - Recognise that science is more than facts and definitions and knowledge in science can build on what students know

Science Engagement and Literacy

Analysis of 2006 PISA Indigenous/Non-Indigenous Australian and NZ Students (Woods-McConney et al., 2013):

- There is a gap in achievement (science literacy)
- The gap is not a result of lower interest in science but instead mainly associated with reading literacy

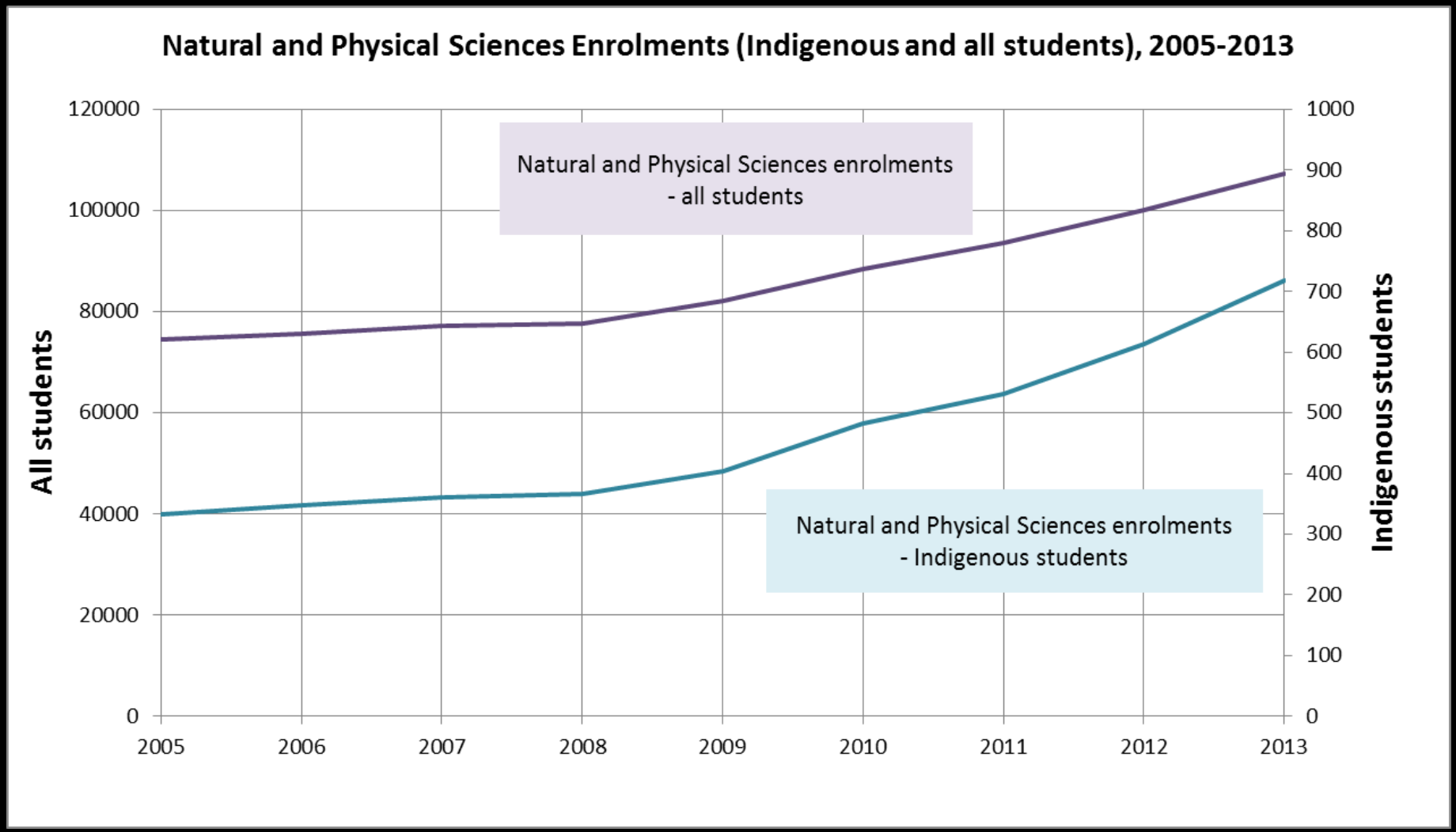
Use the interest in science to improve reading literacy

- Recognise that science is more than facts and definitions and knowledge in science can build on what students know

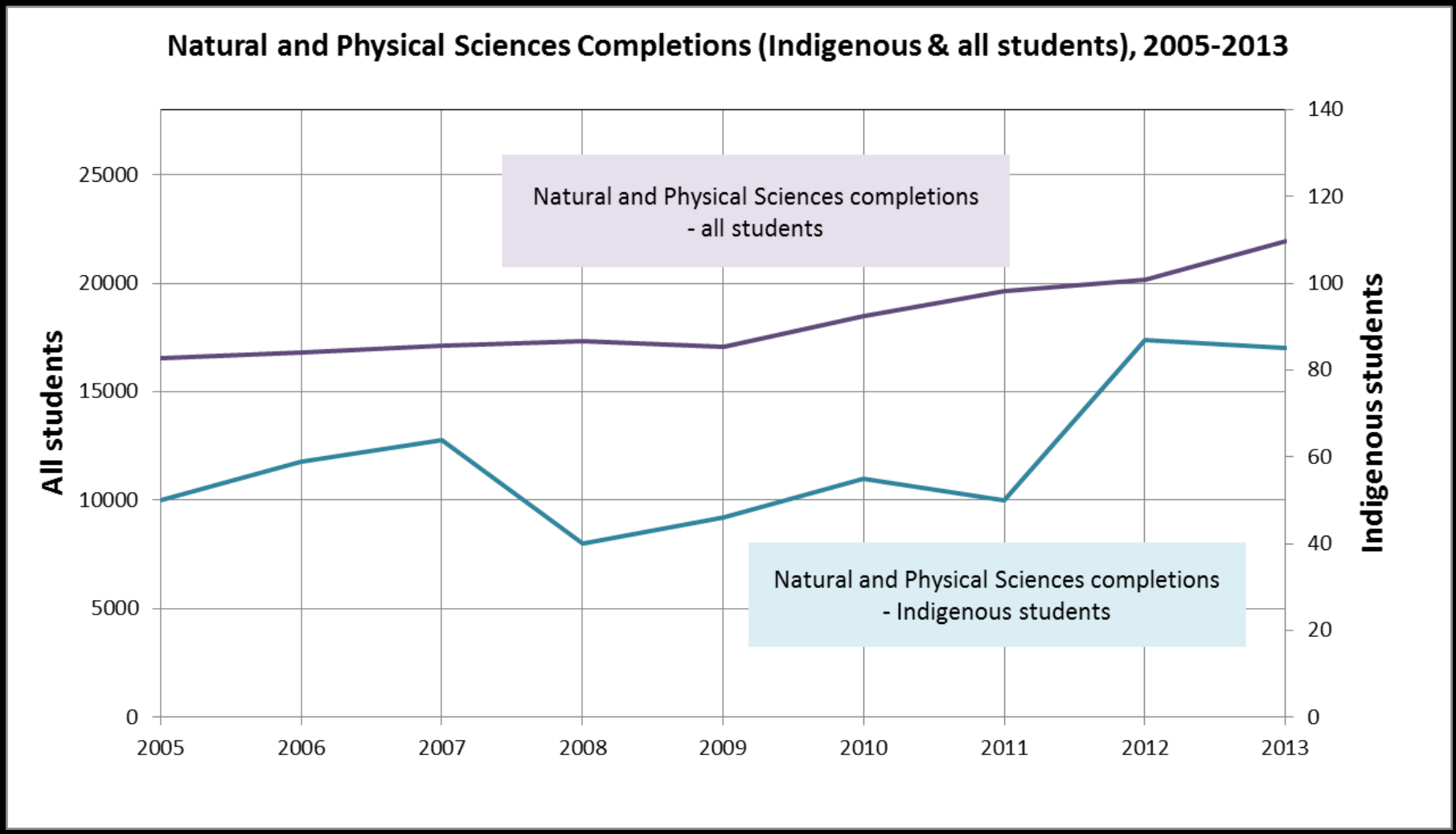
Implications for practice

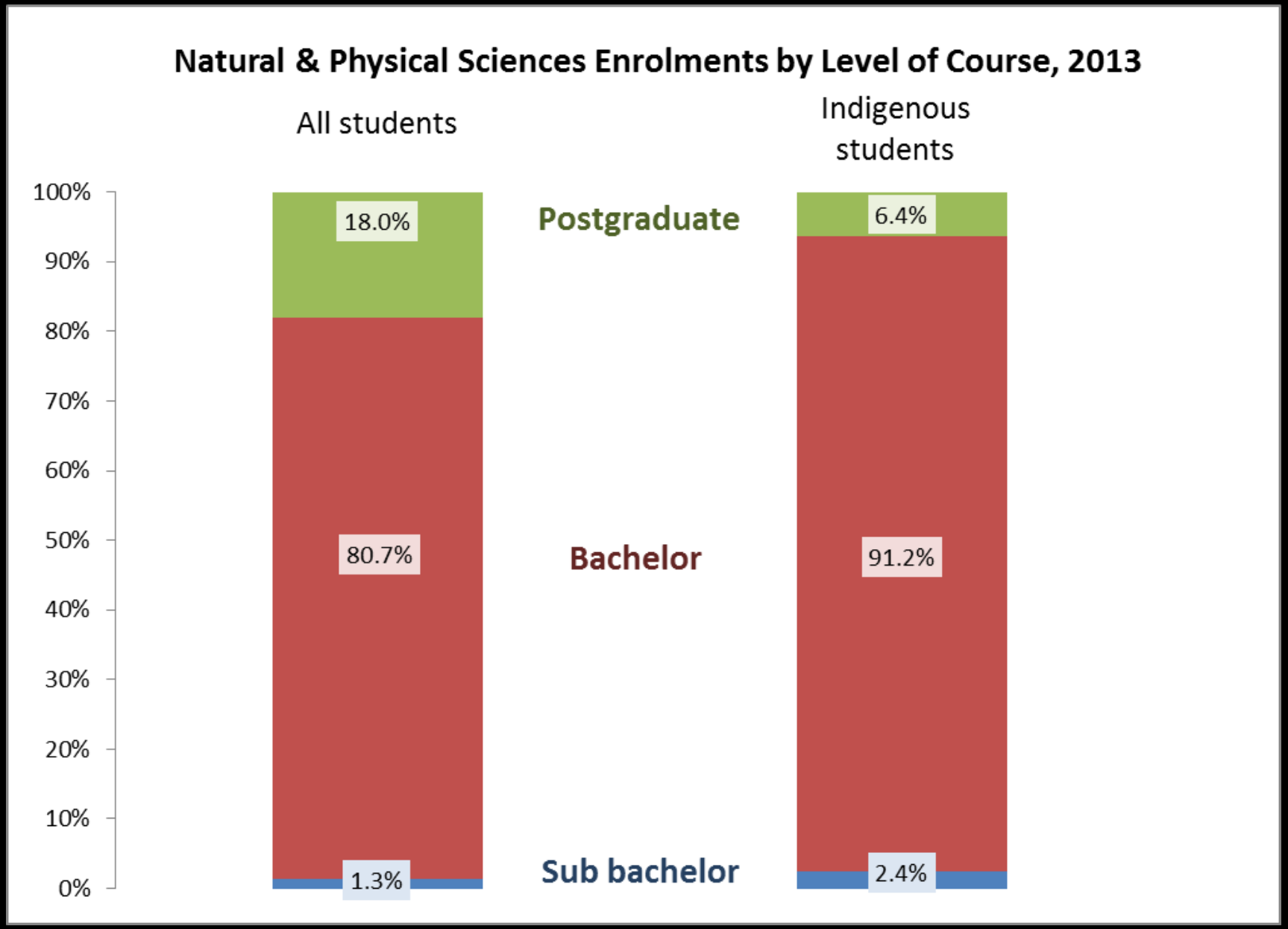
- Relationship among factors in science literacy and engagement not completely understood
- Engagement in science not always associated with high science literacy
- Engagement in science is valuable on its own, not only as a precursor to science literacy
- Connecting out-of-school activities to ‘school science’ may help improve engagement in science for all students

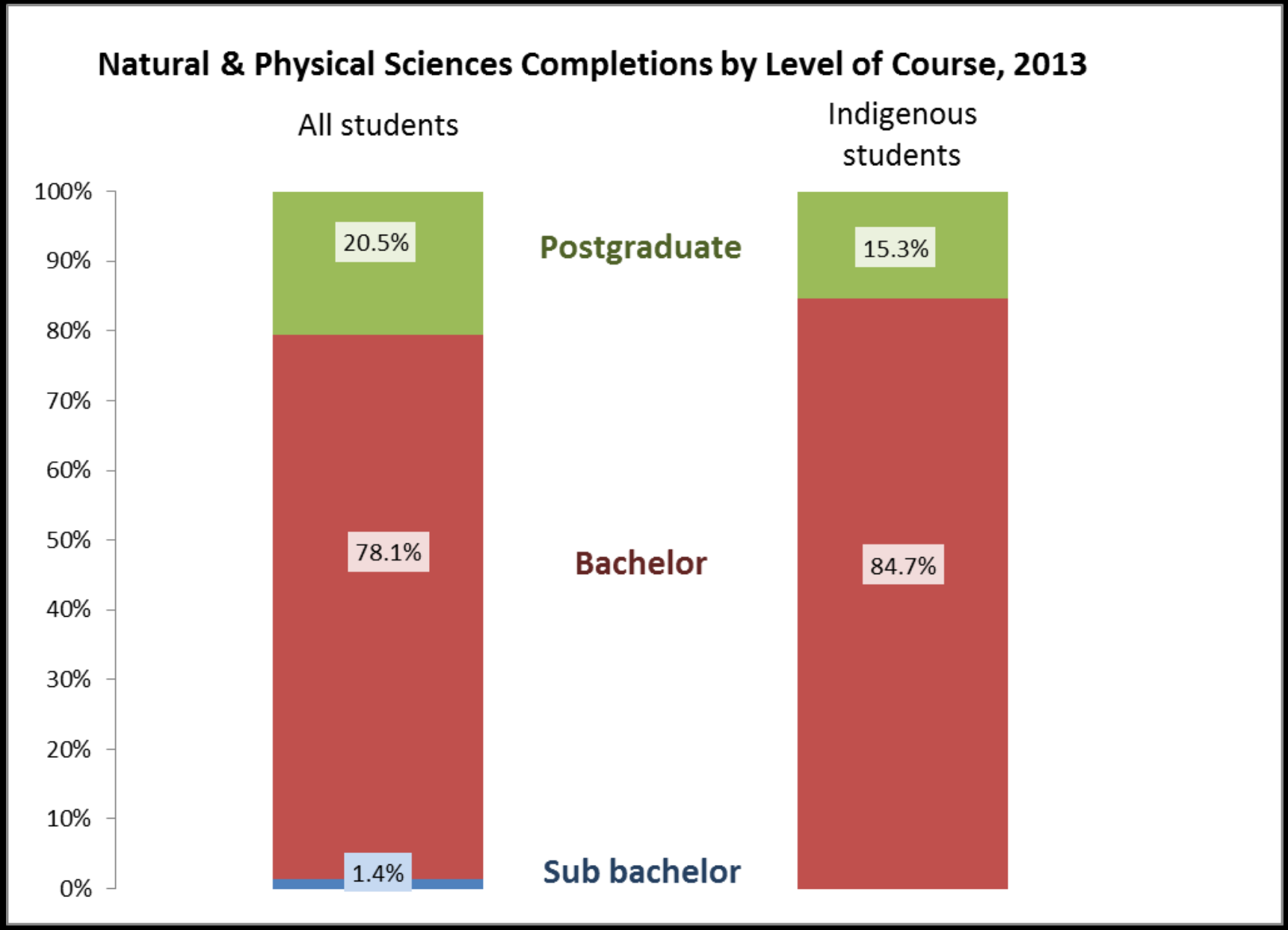
Indigenous participation in science - enrolments



Indigenous participation in science - completions




Natural & Physical Sciences Enrolments by Level of Course, 2013
All students
Indigenous students
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
18.0%
80.7%
1.3%
6.4%
91.2%
2.4%
Postgraduate
Bachelor
Sub bachelor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20%
10%
0%
20.5%
78.1%
1.4%
15.3%
84.7%
Postgraduate
Bachelor
Sub bachelor

Areas where Deans can make a difference

1. Outreach
2. Pedagogy
3. Curriculum
4. Preparation
5. Accountability
6. Pathways
7. Network
8. Sharing information