Growing an Indigenous professional workforce: the national agenda for change

Aboriginal and Torres Strait Islander Mathematics Alliance National Conference 10 November 2014

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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*
### Indigenous enrolments in STEM disciplines

<table>
<thead>
<tr>
<th>Field of education</th>
<th>Indigenous enrolments 2013</th>
<th>Growth since 2005</th>
<th>Proportion of total enrolments in this field</th>
<th>Parity target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural &amp; Physical Sciences</td>
<td>719</td>
<td>116%</td>
<td>0.67%</td>
<td>2,896</td>
</tr>
<tr>
<td>Information Technology</td>
<td>197</td>
<td>49%</td>
<td>0.38%</td>
<td>1,411</td>
</tr>
<tr>
<td>Engineering &amp; Related Technologies</td>
<td>362</td>
<td>160%</td>
<td>0.37%</td>
<td>2,641</td>
</tr>
<tr>
<td>Mathematical Sciences</td>
<td>24</td>
<td>300%</td>
<td>0.55%</td>
<td>119</td>
</tr>
</tbody>
</table>
## Indigenous completions in STEM disciplines

<table>
<thead>
<tr>
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<th>Growth since 2005</th>
<th>Proportion of total completions in this field</th>
<th>Parity target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural &amp; Physical Sciences</td>
<td>85</td>
<td>70%</td>
<td>0.39%</td>
<td>593</td>
</tr>
<tr>
<td>Information Technology</td>
<td>22</td>
<td>144%</td>
<td>0.19%</td>
<td>314</td>
</tr>
<tr>
<td>Engineering &amp; Related Technologies</td>
<td>35</td>
<td>84%</td>
<td>0.19%</td>
<td>494</td>
</tr>
<tr>
<td>Mathematical Sciences</td>
<td>&lt;5</td>
<td>50%</td>
<td>0.32%</td>
<td>25</td>
</tr>
</tbody>
</table>
Student performance on standardised tests

- Standardised tests: PISA, TIMMS, PIRLS, NAPLAN
- Indigenous students achieve well below non-Indigenous (by between 1.5 and 1.0 standard deviations)
- Little change in the gap over time
- Differences evident in Year 3 & remain until Year 9 or age 15

Only two per cent of Indigenous students were top performers in scientific literacy compared to 14 per cent of non-Indigenous students and an average of 8 per cent of students across the OECD. At the lower end of the proficiency scale, 37 per cent of Indigenous students failed to reach Level 2 compared to 13 per cent of non-Indigenous students and 18 per cent on average across the OECD.

Half of the Indigenous students failed to reach Level 2 and half of these students performed at below Level 1, that is, one-quarter of Indigenous students would be likely to have serious difficulties in using mathematics to prepare them in meeting future challenges. The proportion of low-performing Indigenous students (51%) was more than twice that of non-Indigenous students (18%) and the OECD average (23%).

NAPLAN Numeracy proficiency 2008 - 2013

• No change in % of Indigenous students at or above national minimum standard in Years 3, 5 & 7, decrease in Year 9
• Some positive change in mean scores for all students in Years 3 & 5 in jurisdictions with higher proportion Indigenous students, but not significant for Indigenous students.
• Indigenous students made gains from Year 3 to Year 7 & from Year 5 to Year 9 similar to non-Indigenous students.

TIMSS mathematics proficiency 1995 to 2011

Year 4
- Over 50% of Indigenous students didn’t reach Intermediate benchmark
- 28% of Indigenous students didn’t reach Low benchmark

Year 8
- 1% of Indigenous students achieved Advanced benchmark
- 9% of non-Indigenous students achieved Advanced benchmark
- 32% of Indigenous students didn’t reach Low benchmark
- 9% of non-Indigenous students didn’t reach Low benchmark
- No change in Indigenous student performance 1995 to 2011

The national challenge

- The gap in STEM proficiency & participation persists over time
- Better school retention & general performance are not sufficient to effect real change on their own
- A national approach to Indigenous STEM is required
A national Indigenous STEM agenda

- ATSIHEAC STEM Roundtable:
  - Collaborate with Deans of STEM
  - Leverage the national policy agenda
- Chief Scientist’s push for a sensible debate on the future
- Incremental change is not sufficient for Indigenous Australia
- Building a national approach to Indigenous STEM