Executive summary – second evaluation report Indigenous STEM Education Project

The Indigenous STEM Education Project aims to increase participation and achievement of Aboriginal and Torres Strait Islander students in STEM. It consists of six program elements that cater to the diversity of students as they progress through primary, secondary and tertiary education, and into employment.

The first Indigenous STEM education evaluation report (Tynan & Noon, 2017) concluded that the initial implementation of program elements had been successful. However, as the first report focused on implementation, it was not intended or able to provide conclusive evidence that program elements were contributing to an improvement in the engagement, attendance and improved academic achievement of Aboriginal and Torres Strait Islander students in STEM subjects. This second evaluation report begins to provide positive evidence that the goal of increased engagement and achievement of Aboriginal and Torres Strait Islander students is being met across the program elements. Analysis of the data also highlights the need to be cautious in interpreting the findings as these programs are still in the early phase of their implementation and that it will require ongoing monitoring and continual improvement of these programs in both content and in methodological design to ensure that they are meeting the STEM aspirations of Australia's Aboriginal and Torres Strait Islander students and their families.

The key findings in this second evaluation report include:

- The substantial impact of the I2S2 program on increasing Indigenous and non-Indigenous students' achievement and engagement. Although attendance decreased slightly for all students, likely due to seasonal factors, it did not preclude engagement or achievement increases.
- The benefits of I2S2 were particularly pronounced for the Indigenous and non-Indigenous students who were achieving below level prior to the I2S2 program. Sixty three per cent of these students improved their grades.
- PRIME Futures is demonstrating sustained student engagement, and improved learning and understanding.
- ASSETS is demonstrating increases in student engagement, including aspirations for university and STEM studies, and some students choosing more STEM subjects in Year 11.
- The Bachelor of Science (Extended) is experiencing variable recruitment (between 5 and 12 students per year), with retention (between 58 – 100 per cent) and average subject completion rates (67 per cent) broadly comparable to national rates for Indigenous university students and for all science degree students in Australia.
- Initial data showing high levels of transition of former ASSETS students to university, including strong representation in STEM or STEM-related degrees.

The evaluation findings of the Indigenous STEM Education Project should be interpreted within the context of contemporary research on participation in STEM by Aboriginal and Torres Strait Islander peoples. A number of potential biases could affect the methodologies and the findings. A discussion of these biases and how the evaluation design has, and will, manage or minimise them are included in this report. Forthcoming in-depth case study research on I2S2, Bachelor of Science (Extended), ASSETS, and Science Pathways for Indigenous Communities will provide further key evidence on the impact and effectiveness of these elements.

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