PrimaryConnections®
Linking science with literacy

PrimaryConnections
Project Overview

The 'PrimaryConnections – linking science with literacy' project is based on research and is well conceptualized

- It is an inquiry-based model.
- It links science with literacy and numeracy.
- It incorporates Indigenous perspectives.

It addresses problems in science education which include:

- Average time spent on the teaching of science in primary classrooms is less than 3% of total teaching time (Angus et al. 2007[1]) or 45 minutes per week.
- Research indicates that primary teachers lack confidence in teaching science.
- There is a decline in the number of students choosing science and mathematics beyond the compulsory years of schooling.
- Students are losing interest in science as they progress through their schooling – current research indicates that if students are not 'switched on' to science by ages 11-14 they will not continue with science studies.

It is not just a set of units or workshops but a comprehensive approach including:

Professional learning

- 23 Master Facilitators (three days training), 677 professional learning facilitators (three days training), 1350 curriculum leaders (two days training) and 125 tertiary facilitators (two day workshop) have been trained.
- Developed in collaboration with State and Territory government and non-government education sectors.

Curriculum resources

- Aligned with the Australian Curriculum: Science.
- Eleven further PrimaryConnections units will be developed making a suite of 30 units for primary school.
- Specific information about alignment and release dates of curriculum units can be found in the document 'PrimaryConnections and the Australian Curriculum: Science' available on the website.

Communications strategy

- Promotion to support national uptake of PrimaryConnections – targeting Australian primary principals.

Indigenous perspectives

- Incorporation of Indigenous perspectives in the curriculum resources and professional learning.

Research and evaluation

- Ongoing monitoring and evaluation of the impact of the PrimaryConnections project.

[1] Angus, M., Olney, H., & Ainley, J. (2007). *In the Balance: The future of Australia's primary schools*. Australian Primary Principals Association.

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Collaboratively developed:

- $9.7 million funding by the Australian Government Department of Education, Employment and Workplace Relations 2005-2011.
- Collaborative Reference Group representatives from state and tertiary education sectors, Science, Literacy and English professional associations, ACARA, APPA and the Australian Council of Deans of Education.

Research evidence:

There is substantial evidence of the impact of Primary**Connections** in the research reports available on the Primary**Connections** website. All findings are statistically significant. The foci of the research reports are diverse.

There is evidence of a positive impact on teachers. They develop more confidence and competence. Many teachers with long teaching careers who have avoided the subject are now teaching it with passion. Pre-service teachers have found it a valuable way to do a good job from the start.

There is evidence of positive impact on students and particularly Aboriginal and Torres Strait Islander students, with increased interest as well as demonstrated improvements in science knowledge, processes of science and literacy. A study of almost 1500 students comparing those in classes using Primary**Connections** to those using other teaching models found:

- almost twice as many could make a quality scientific drawing; and create a correct table of data from an investigation
- more students could identify the variables in an investigation.

There is evidence of impact on professional learning facilitators (PLFs) and curriculum leaders – they develop sophisticated understanding of inquiry-based approaches, and develop confidence as leaders of science in their schools.

In summary the key research findings are that implementation of the Primary**Connections** teaching and learning model:

- improved student learning outcomes in science
- improved student learning outcomes in the literacies of science
- improved learning outcomes for Indigenous students
- enhanced teacher self-efficacy and confidence in teaching science and literacy
- enhanced curriculum leader self-efficacy and confidence in science leadership in schools
- enhanced Professional Learning Facilitator self-efficacy and confidence in facilitating
- increased teaching time for science
- an enhanced profile for the teaching of science in Australian primary schools

For further information see the full research reports available on the website.

www.science.org.au/primaryconnections

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