

Innovative Projects in Indigenous Education

November 2009

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ASISTM Program

- Science, Mathematics and Technology Education
- Commonwealth funded grants project
- Targeted clusters of schools
- Ran over 5 years (2004-2009)
- Four rounds funded
- 355 projects
- Involved approximately 20% of all Australian schools and a number of overseas schools
- All but one Australian university (36)
- Over 1000 non school partners

ASISTM

Key Elements of the ASISTM program and projects

- Innovative
- Every project (355) is unique
- Collaborative
- Creating partnerships across educational boundaries
- Contemporary practices in STM formed the content focus of most project
- Teacher Associates
- Critical Friend Model

Science, Technology and Mathematics curriculum and pedagogy improvement

- Innovative educational outcomes
- Localisation of content
- Professional Learning in context
- Engaging and motivating learning programs
- Cross Curricular development
- Sustainability and environment were key project themes utilising a cross-curricular theme
- Excellent models for community involvement in education

Indigenous Education

Significantly represented across all rounds

Improved learning outcomes for students and professional learning for teachers in indigenous communities

Engagement of indigenous community encouraged

Alignment of science, technology and mathematics to an indigenous focus

- Action research
- Use of multimedia
- Numeracy
- Linking science through indigenous language and culture
- Vocational Education
- Professional learning to develop skills to teach remote Indigenous students
- Content and pedagogy for indigenous students

Indigenous Involvement

Includes:

- Projects self identified their Indigenous nature
- Our stats - projects with more than 10% Indigenous
- Approx 10% of projects in each funding round
- Other projects involved Indigenous students and some Indigenous focus

Nature of Projects:

Learning areas

- Mathematics pedagogy and content for indigenous students, professional learning and support for teachers
- Integrated activities to expand Science, professional learning and support for teachers, localised context
- Incorporating design and technology into the curriculum

Partners

Schools -Rural, remote, suburban
P-12, primary, secondary,
VCAL, vocational

Universities – all projects were linked to a university. Research, support, professional learning

Other – Tangentyere Council,
Desert Park Sanctuary,
Design Institute of Australia

Case studies

- Enhancing Mathematics for Indigenous Vocational Education- Training students
- Innovative Design in Remote Schools
- Land & Learning for Anmatyerr Schools
- Digital Dreaming Animation: The Legend of Gulnyaruby
- Resilient Professional Numeracy Network - Kimberley Region
- School DustWatch: Remote School Students Participating in Real Life Environmental Science

Enhancing Mathematics for Indigenous Vocational Education-Training students

- Schools in Far North Qld Bamaga, Palm Island, Thursday Island, Wadja Wadja, Townsville
- Coordinated by QUT (also students as TAs), Griffith uni
- Secondary students – various school sizes
- Focus was the development of maths VET resources and PL for teachers and TAFE teachers. Materials designed to target the vocational, maths and cultural needs of students.
- Planning seminars the six sites to determine needs, materials developed and trialled in consultation with the 6 sites.
- Successes included working with sites to identify relevant vocational contexts, the interest from people outside the sites, interest and enthusiasm of project partners, further grants to continue work.

Innovative Design in Remote Schools

- Hedland, Kalgoorlie, Newman, Kununurra, Tom Price
- Coordinated by Edith Cowan University. Partners included Dept of Education and Design Institute of Australia (DIA)
- Secondary govt schools
- Design and Technology focus – aimed to help D&T teachers in remote schools develop projects that involve students in relevant innovative design
- Schools developed D&T activities that were trialled in schools. Activities were revised based on trials. Final trialled activities available for other schools to use.
- Sharing with other teachers and building networks in workshops – both content and challenges relating to remoteness was highlight. Having the TAs in schools 2 ended up remaining in the schools.

Land & Learning for Anmatyerr Schools

- 2-3 hours north, north west of Alice Springs- Utopia, Ti Tree, Laramba, Mt Allan
- Tangentyere council, Desert park, Biologist/ Botanist
- Primary and P-9
- The focus was to use community members as teacher associates to support the learning about the land and develop resources suitable for the local environment and cultural context
- Each school undertook their own theme participating in bush and classroom activities to investigate medicine plants, a traditional tools project with local elders, environmental factors , traditional foods
- Facilitation of Anmatyerr language and cultural activities was significant for teachers, students and community elders. The model has reduced the impact of high staff turnover

Digital Dreaming Animation: The Legend of Gulnyaruby

- Far North Qld - Yarrabah
- Yarrabah Council, Menmuny Museum
- P-12 school
- Literacy & numeracy software package designed for indigenous and ESL (English as a second language) students was developed by the Project Coordinator to bring traditional stories to life and facilitate cross-curricular integrated learning. For ASISTM, the students produced an animation of the story "Wunyami - The Place of the Hole in the Nose", following a visit to Green Island with community elders. This group of students was mentored by an artist who was contracted to develop a stop motion animation of a separate story, 'The Legend of Gulnyaruby'.

Resilient Professional Numeracy Network - Kimberley Region

- Isolated schools - Fitzroy Crossing locality
- Teacher associates from local community, Project appointed numeracy consultant, AICS support unit, AIWSA numeracy consultants
- Community controlled independent schools, P-12, primary
- The focus was to lift the status and attention given to mathematics in schools and support indigenous educators from the community to be involved in the process
- Consultants worked in the classrooms with teachers to capture key pedagogical/ideological ideas to establish model and improve methodology. Teacher associates participated in process. Ongoing discussion and development .
- Creating a cultural change, the significant benefit of regular ongoing support

School DustWatch: Remote School Students Participating in Real Life Environmental Science

- Remote schools out from Alice Springs and Mt Isa – Canteen Creek, Alpururulam Cec, Walungurru, Stirling, Finke
- Scientists, PhD on wind erosion, educational consultant,
- Primary, secondary
- The focus was to establish and support a network of remote schools to enable students and teachers to participate in action research
- Training was provided to each school community in the research skills required. The use of technology was integral to the project . A website was developed to support ongoing communication and presentation of students' work.
- Working with the community rather than just the school, allowing the students to have a lead role in informing the researchers about local knowledge, local content

<http://schooldustwatch.edu.au/home.html>

http://www.asistm.edu.au/asistm/asistm_case_study_15,27861.html

What works

- Project based or problem based learning
- Strong skill focus integrated with “doing”
- Open pedagogies enable students increased agency
- Creation rather than absorption of knowledge by students
- Interdisciplinary links and local use of knowledge of people
- “in situ” learning experiences for teachers
- A “real” audience for students’ work
- Field trips and projects in the local environment