

## ***Linking School Science and Mathematics with Industry and Community — Development of a PD package***

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### **Project Description**

There is abundant evidence that many students in Australia and other developed countries are becoming increasingly disengaged with school science, finding it to a large extent irrelevant to their interests and concerns, the pedagogies authoritarian, and the content unrelated to contexts they would recognise as significant. The problem with student lack of engagement with school science relates in part to the failure of the curriculum to present science in relevant and meaningful contexts, and the lack of representation of contemporary science practices, including the human aspects of scientists' work and passions.

This concern with student disengagement is arguably a driver for an increasing incidence of school science activities that link beyond the classroom to local or global communities. Such initiatives often explicitly aim to expose students to the practice of science in contemporary and socially engaged settings, in order to make science learning more relevant to them.

The earlier project, 'Linking school Science and Mathematics with Industry and Community', took as its starting point experience of the research team with successful school-community science projects and the observation that most of these were set in rural communities. The research interrogated eight rural community linked projects from an innovation perspective, to explore the extent to which these in part seemed to point towards pedagogical practices and settings that engage students. The findings were very positive for the outcomes of these projects. Case studies of a further 16 projects were constructed, associated with the national ASISTM initiative, further refining our understanding of these initiatives. Most of these are in rural areas.

The data gathered from the case studies are very rich and provide considerable insight into a number of issues, particularly the processes of innovation, the sustainability of innovation, the nature of community-school linkages, the relationship between the projects and the school curriculum, and leadership of projects. In this extension to the project we are in the process of developing and refining an innovation framework which would act as a theoretical lens through which to view these school – community initiatives, and to support the promotion of these.

In particular, it is proposed that the case studies and innovation framework be used to develop and trial a professional development package for teachers and community partners, that will support them in planning and sustaining innovation involving school-community links in science, technology and mathematics.

### **Project Participants**

This project draws on the data gathered in two previous studies: the SiMERR School/community linkages project conducted by the Victorian Hub; a study of exemplary ASISTM projects conducted by researchers at Deakin University and led by Professor Tytler. Accordingly it draws upon data gathered from many school clusters and schools including:

- Corryong School Cluster
- Leongatha School Cluster
- McKillop College, Werribee
- Ovens Secondary College
- Yarrawonga School Cluster
- You Yangs Learning Community

### **Project Activities**

- As indicated above the project draws on data from two earlier projects, which was selected based on its suitability.
- A model for a professional development package was developed.
- The material was written and revised in the light of comment from people who have been through the process of developing and implementing school/community linkages around school science programs.
- The package developed will be trialled in schools interested in developing school/community linkages around the school science program.
- Further revision will be undertaken in the light of the outcomes of the trial.
- The PD package will be web and CDROM based and will be freely available to schools and community and industry.

### **Project Findings**

The package is about to be trialled at the time of writing (Sept 08).

### **Project Outcomes**

There will be a tangible resource at the end of this project in the form of a website and package of materials which schools and school clusters can use to explore the possibilities open to them to build schools community linkages which will enrich the science programs being offered within their schools.

Further the Hub personnel will ensure that the rationale for the process, the understandings developed from the process itself, and the nature of the package are widely communicated in the professional literature both within Australia and internationally.

### **Impact**

A number of education providers have expressed interest in this resource, including other SiMERR members, and also government policy people. It will be in a form suitable for use in a range of situations including face to face PD for teachers in schools, information and advice for industry, and pre service teacher education courses.

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