

## PD for Interactive Whiteboard Use

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Project Title	Supporting a Remote Community School in Whole-School Teacher Professional Development to use Interactive Whiteboards to Enhance Teaching and Learning in Science, ICT, and Mathematics
Project Team	Associate Professor Len Sparrow, Dr Sandra Frid, Professor Sue Trinidad, Ms Melanie Smith (SiMERR WA)
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Organisational Base	SiMERR WA

### Description

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The use of interactive whiteboards in schools in Australia is relatively new, and hence there is little research into how teachers learn to use them effectively, or what their impact is on students. It has been suggested that the interactive nature of interactive whiteboards is a powerful tool to motivate and engage learners and thereby enhance learning outcomes, particularly outcomes related to communication, visual learning, literacy, and numeracy. In this way interactive whiteboards can serve as powerful catalysts for innovative curriculum development that integrates ICT as a learning platform for other curriculum areas. The focus in this project is upon science, ICT, and mathematics teaching and learning.

The project aimed to support and document the use of interactive whiteboards (IWBs) in a remote location through an action learning/research program. The school is located in a remote mining community of about 500 people with an approximately 80% Indigenous population. Specifically, teachers at a K-12 remote community school were supported by SiMERR WA as they engaged in learning about, planning for, and implementing the use of interactive whiteboards. The project had a focus on professional development, as it evaluated the processes and outcomes of a whole-school teacher professional development initiative focused on the innovative use of new technology to enhance teaching and learning in science, ICT and mathematics.

The teachers used an action research cycle of plan, act, observe and reflect as a professional development process to learn about and integrate IWBs into teaching and learning practices. These activities were supported by a researcher visited the school twice to meet with staff, discuss ideas and practices for using IWBs, and visit classrooms. The teachers were interviewed about: their teachers' knowledge of how to use IWBs, including planning for learning/teaching activities and managing their implementation; teachers' thinking about students' learning when using IWBs; teachers' classroom practices when using IWBs; teachers' perceptions of the value to their professional learning of participation in the action research process; and teachers' perceptions of what helped and hindered their professional learning related to the use of IWBs

### Participants

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All teachers at a remote community school with an enrolment of 105 students in Kindergarten to Year 12. The total number of teachers over the 15 months period of the project was 12, plus teaching assistants.

### Findings

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The findings provided evidence that teachers changed over the year in the ways they used IWBs. Initially, the IWB served many of the teachers merely as a large screen for presentations or demonstrations. Only later, once they had mastered using the hardware and software and had gained some related experience in conducting short presentations, did they begin to consider or explore how learning activities might provide more opportunities for student interaction with the IWB. Classroom management challenges related to students' diverse achievement and learning needs when using an IWB further prompted the teachers to reflect upon their teaching practices and consider how to use the IWB to enhance student learning. Thus, the IWB acted as a catalyst for reflective practice and related professional learning. In relation to implications of the findings for teacher professional development, the development of a professional learning support community for sharing and discussing ideas and resources emerged as a vital need, especially in relation to the isolated nature of the teachers' environments. They were distanced from professional development training programs for IWBs, and at the same time they did not have colleagues at the school teaching in the same year levels or subject disciplines as themselves.

## Outcomes

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## Impact

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Through involvement in this project, the science teacher at the school became involved in another SiMERR WA project that further enhanced her professional learning and practices as a teacher (Enhancing the Professional Participation of Science Teachers).

Teachers achieved varying levels of use of IWBs during the time of this study, indicating that professional learning for using IWBs needs the people resources as identified by the teachers, and it also needs extended periods of time and flexibility. The teachers as a group also developed a degree of self-sufficiency as a professional community because they had to assist each other as new staff arrived or teaching duties were changed. This was particularly important due to the isolated nature of the school and community. The teachers also needed to support each other to progress their professional learning to go beyond technical skills into pedagogical and curriculum issues. The project successfully addressed three professional development needs for remote schools: (i) structured opportunities for teachers to share ideas and work with one another; (ii) professional development support delivered to the school (not the school going elsewhere); and (iii) locally developed curricula.

In addition, implications of findings of this study for supporting teachers in their professional learning related to IWBs, particularly in remote locations, relate to appropriate initial training followed by ongoing people support. An IWB can act as a catalyst for professional learning, but that learning needs to be supported by:

- Quality training, to provide teachers with a clear understanding of the pedagogical application and advantages that the technology can bring;
- Time, so that the process of change can develop familiarity and confidence with the technology;
- One or more key individuals who are given the time and responsibility to explore the new technology through use, and who subsequently inspire and lead others; and
- A whole school approach with the commitment of all staff.

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