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Technology and teachers in rural schools: creating future advantage

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Abstract
This paper reports on a project situated in regional areas of Victoria in which a group of 16 primary and secondary teachers participated in an intensive program of professional development designed to assist them in embedding ICT into their classroom. The project provides some insight into the availability and use of current technological resources in the rural schools and examines the impact of an intensive professional development program of instruction on the implementation of ICT into the curriculum.

Introduction
It is now widely recognised that a computer-mediated curriculum can support student learning by providing a medium that is constructive, active and engaging (Severinsen, 2004, Huffaker, 2003). Used as tool, it is effective at situating the learner at the centre of learning, in control of his/her learning. “Technology is a potentially powerful learning tool in the rural and urban setting if used effectively. It is the use of this tool and understanding how to use the tool that is important.” (Gregor, 2005). Research indicates that the benefits of computer mediated learning can be the key ideas of active learning, metacognition and transfer of learning from one situation to another (Huffaker, 2003). Students spend much of their own time investigating on the internet and the use of computers in schools as a curriculum tool is highly supported. (Levin & Arafeh, 2003).
While there seem to be compelling arguments for the incorporation of computers and their applications into curricula (Harrison, Comber, Fisher, Haw, Lewin, Lunzer, McFarlane, Mavers, Scrimshaw, Somekh, & Watling, 2002), the reality is far from ideal. The problem is particularly compelling for teachers and students in rural areas. Australia has many rural and remote areas, as does the USA, Canada and many countries, and there is increasing concern about disadvantage associated with this. This project has explored a model that has the potential to address rural issues in the teaching and learning of ICT.

As indicated above, many teachers have considerable difficulty in gaining access to professional development in ICT use in rural areas. Change in teaching practice involves the acquisition of technical knowledge and skills, access to resources including hardware, software and web access, and also mastery of pedagogies that support the effective use of ICT. Historically, professional development of teachers most often occurs through the medium of workshops and conferences that focus on particular elements of practice, classroom activities and ideas, and skills and content knowledge. While there are some advantages to this approach there are serious disadvantages. It has been shown
that this ‘skill & knowledge’ approach is quite ineffective in challenging and supporting more fundamental aspects of teaching practice and beliefs practices (Owen et al. 1987, Carrick 1989, Hoban 1992). Professional development must address the connection with school priorities or the direct needs and concerns of participants, and the lack of long term and systematic planning (Webb 1993). Drawing on research, Joyce and Showers (1995) advocate the professional development should be situated within the school context and within a framework of cultural change – that it is more than just a teacher driven change, it is a change required by the whole school community. Teachers need support, social and otherwise as they practice ne strategies or incorporate difficult ideas into curriculum. Others, (eg. Hargreaves 1994, Hall & Hord 2001) have emphasised that change requires teachers to ground new ideas in their own personal experience. Consequently, for significant teacher development and for long term change in schools to occur, ongoing professional development, sensitive to the needs of teachers and schools, is necessary to support significant teacher development. Teacher professional learning must be supported by the input of information, and also supported in ongoing implementation. The intensive professional development which was developed to improve ICT in rural and regional areas actually took note of these requirements and was built around this framework: input of information, development of skills, ongoing implementation and support, school culture of change, situated within school environment.

Significance
This project is significant in three ways:
- providing data on the technological resources that are available in the schools,
- in identifying how these resources are used by teachers
- examining the effectiveness of professional development for changing teaching practice in using ICT.

An Australian national survey conducted in 2005 of 2940 teachers, 928 parents and students found significant disadvantage for rural schools and students in a number of different areas. In particular, there was a high turnover of teaching staff as well as huge difficulty in finding staff to fill positions, particularly in mathematics, science and ICT. Teachers in regional and rural schools indicated a high unmet demand for professional development in all areas. In addition, teachers, parents and students reported inequities in terms of the availability and quality of on-line access, access to technical assistance and support services, and resource provision (Lyons, Cooksey, Panizzon, Parnell & Pegg, 2006).

Research has shown that for schools to integrate ICT into their curricula, a number of factors need to be in place (Ping, Swe, Hew, Wong & Shantri, 2003). These include the school’s and teacher’s integration strategies, the support from school leadership, professional development for the staff, and resources. This
paper will deal with issues and possible solutions to the problems of the integration of ICT, in relation particularly to rural schools.

**Design and Procedure**

In response to the problems flagged by the Australian research into rural and regional disadvantage, the Association of Independent Schools of Victoria (AISV) designed and implemented a professional development and school support initiative. The project involved 12 schools diverse in their size, religious affiliations and location. There were 5 small school (<100 students), 4 medium schools (100-300 students) and 3 large schools (>600 students). The schools were divided into three dispersed hubs across Victoria (Australia). Collaborating with the rural schools, AISV provided an intensive training program on ICT at each hub for teachers (termed ICT coordinators) chosen from within individual schools, some resource support for those in need, and follow-up mentoring. The model involved progressive training for teachers at school – a “train-the-trainer” model.

Initially, the research project was developed to investigate the integration of ICT into numeracy and literacy, however, evolved further as teachers incorporated ICT in all discipline areas, including science. This paper will focus particularly on examples in science.

The research questions addressed by this paper include:

- What are the particular circumstances in these rural schools and communities that affect the use of ICT in teaching and learning?
- How successful is the intervention in achieving a positive change in:
  - Teacher classroom practice and understanding of the potential role of ICT to support learning and effective pedagogies relating to this?
  - Teacher and student attitudes to the use of ICT in teaching and learning?
- What aspects of the professional learning model embedded in the intervention have been successful in improving teaching and learning?

This research project investigated three hubs of schools located across the state as both the schools and teachers attempted to integrate learning technologies as a normal part of classroom practice in mathematics, literacy and science. In total, 12 schools were studied, with a mixture of both primary school levels (grades preparatory to year six) and secondary (grades seven to twelve). School principals, coordinators, classroom teachers and students were initially surveyed to provide a baseline of competencies, interest and daily use in Information and Communications Technology (ICT).

After the initial visits and coordinator consultations, coordinators attended the training period of five days, 8 hours each day. These workshops were evaluated
and coordinators provided feedback on the usefulness of the program for their professional competencies. The paper will present some brief case descriptions to illustrate the variety of beginning competence levels, and outcomes for coordinators during the workshops, and examine the effectiveness of different aspects of the training model. After a period of 4-5 months, schools were visited by a mentor, and also the evaluation team member, to discuss progress and provide advice. At this time, interviews were held with the coordinators, participating teachers and students involved in the teacher's classroom where the integration of ICT was occurring. The final part of the project was a further survey response by all participants and a showcase event in which teachers displayed student work and described innovations they had made in their teaching.

Figure 1: The PD intensive program

<table>
<thead>
<tr>
<th>Day</th>
<th>What research says about effective use of ICT Curriculum frameworks - VELS, NCC, Inquiry based learning, blog use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>The learning federation, learning objects and digital resources, interactive whiteboards Exploration of learning objects, and their pedagogical use Mathematics, numeracy learning objects Mathematics interactive web resources, Microsoft student, Graphical calculator</td>
</tr>
<tr>
<td>Day 2</td>
<td>Digital storytelling Microsoft producer, Photostory, movie maker Mid training exploration of use of resources in the unit of work that is to be created</td>
</tr>
<tr>
<td>Day 3</td>
<td>Planning and support for unit of work creation Development of resources throughout the day, with frequent pauses for reflection, collaboration, support.</td>
</tr>
<tr>
<td>Day 4</td>
<td>Finishing touches to resources Presentation to group. Discussion of how to train others. Blockers to PD. Feedback session</td>
</tr>
</tbody>
</table>
Methodology and data collection methods
The structures, relationships and content of the professional development program and the people involved were explored. This entailed engagement of the interpretive categories of the social values, educational values, beliefs and attitudes of the coordinators, the main participants. Secondly, how the teachers translated the information and expertise gained in undertaking the professional development program was of great importance. The researchers wanted to illuminate the distinctive approach the teachers were using and to detail the complexity of this situation.

To ensure the richness of the data, both qualitative and quantitative methods were selected. Quantitative data from the participating schools and teachers provide indicators of change to teacher practice, in particular in aggregated form. Multiple data tools were used, including: questionnaires of students, teachers, ICT managers (if relevant) and teacher coordinators; interviews of students, teachers, teacher coordinators and ICT consultants who presented the professional development; field observations of classrooms and final presentations; and blog entries. These data sources, collected throughout the six month duration of the project, are used to address the research questions. In analysing the data, triangulation across the multiple data sources validate the results. Teachers’ perceptions and opinions are compared with evidence of change in teachers’ practice.

Case studies of representative teachers provide qualitative data.

Results

The initial questionnaires indicated that there was a huge difference across all sectors and in particular, the coordinators varied greatly in their skills and abilities. These questionnaires, and initial visits to the sites involving teacher interviews, highlighted the diversity of circumstances experienced by the schools, not only in terms of ICT availability and use, and teacher experience, but also in more general issues of cultures of curriculum planning and integration, size, communication, and pedagogical presumptions.

On the final day of the PD intensive, participants (n=16) filled in a questionnaire which consisted of a number of Likert scale items, as well as open responses to questions (see Figure 2).

Analysis of PD Survey responses

The scoring for most Likert items indicates a high level of approval of both the PD program and the consultants. The survey results indicate that all the teachers in the project agreed that the professional instruction stimulated their interest, and confidence in using ICT in their classroom practice (item 3,4), and stimulated their abilities to use ICT (item 6).
Figure 2: The PD Model

Selection of schools and coordinators

Initial school visits to ascertain ICT context

Planning of PD based on school needs

5 day PD intensive focusing on ICT knowledge and skills, and curriculum

Coordinator implements unit of work with ICT embedded

Coordinator implements further ICT classroom strategies

Support provided by consultant visits

Coordinator trains other teachers using a similar PD

Trainees implement ICT units or strategies, supported by the coordinator

Personal development aspect of the model

“Train the trainer” aspect of the model
Figure 3: Evaluation of the 5 day professional development program in ICT (n=16)

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree (SD), Disagree (D), Neutral (N), Agree (A), Strongly agree(SA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>My attitude towards ICT has changed during this week</td>
</tr>
<tr>
<td></td>
<td>SD</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td>2.</td>
<td>The PD was relevant to my teaching</td>
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<tr>
<td>3.</td>
<td>The PD was successful in increasing my confidence to teach with ICT</td>
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<td></td>
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<tr>
<td>4.</td>
<td>My interest in the applications and resources of ICT has been stimulated by this unit.</td>
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<td>1</td>
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<tr>
<td>5.</td>
<td>I have been introduced to some new ideas about curriculum</td>
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<td></td>
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<tr>
<td>6.</td>
<td>My ability to use applications of ICT has been stimulated by this unit.</td>
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<td></td>
<td>6</td>
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<tr>
<td>7.</td>
<td>I have identified links between the use of ICT and the curriculum</td>
</tr>
<tr>
<td></td>
<td>6</td>
</tr>
<tr>
<td>8.</td>
<td>The balance between learning ICT skills, developing curriculum resources and exploring strategies for implementing ICT effectively has been appropriate.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>The resources on the CDROM have useful to support my learning.</td>
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<tr>
<td></td>
<td>4</td>
</tr>
<tr>
<td>10.</td>
<td>The PD session has motivated me to think about my teaching.</td>
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<tr>
<td></td>
<td>4</td>
</tr>
<tr>
<td>11.</td>
<td>The PD has prepared me well to train other teachers.</td>
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<td></td>
<td>1</td>
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</tbody>
</table>

**Analysis of responses for open questions**

1. What are the most useful and/or valuable thing that you have learned in this PD?

   The responses related to:
   - Technical knowledge and skills (13)—resources, software packages (folio, photo story) and web sites
   - Pedagogy (5)—models of teaching, varied presentation, how to integrate ICT and use it for curriculum planning
   - Nature of the PD (3)—small group support, having a full week, guidance and support.

2. What were the least useful and/or valuable things about this PD?

   Most responses indicated there were no such things, and commented on this being excellent PD. There were a few comments about time
available and feeling rushed, and one request for a clearer package of prior information.

3. Can you suggest additions and/or deletions to the Professional Development?
   Again, most responses indicated no need for change. Those that did, referred to the possibility of a more carefully structured approach and written support ‘for dummies’, and a request for better access to websites, from Gippsland.

4. Please comment on your experience of the small group teaching that was part of this professional development
   The response was overwhelmingly positive concerning the value of the small group environment:
   
   *Excellent; will use this at school* • *small group was essential for feedback/support; limits frustration* • *it heightened my awareness of how individual the learning process is* • *excellent; great sharing; hopefully a network will develop from the group* • *a good opportunity to network with professionals in the region; a supportive environment for risk-taking* • *excellent; Paul is a great facilitator; we shared ideas and had fun*

5. Please comment on the value of:
   
   **The reflective journal / blogs** - the comments were uniformly positive:
   
   *an excellent tool; enables one to assess development over time* • *excellent; gave chance to see how others were progressing* • *good communication tool*

   **Your presentation** - The comments were mainly positive, but some indicated the frustration and difficulty experienced:
   
   *It was good to show and learn* • *excellent; gives opportunity to draw the week’s learning together* • *happy but frustrated (hyperlinked documents were lost)* • *felt under-prepared; encouragement was appreciated*

6. Are there any changes you would recommend concerning the running of the PD?
   
   Again the majority suggested no change was needed. There were a few suggestions.
   
   • *bring “hands on” learning forward to the first two days; information overload can inhibit learning* • *hourly breaks* • *step by step demonstrations; whole class activity “that we do together before starting on our own folio”* • *ensure the hub/host site unblocks web access for the PD* • *better access to websites*

7. Any other comments about the unit are appreciated
   
   Mostly the results were very positive.
   
   *Thanks for fueling my enthusiasm for IT* • *enjoyed it but was tired; look forward to sharing experience with colleagues at school* • *gratitude to Robyn; it was good to be reminded how students feel (i.e., challenged, unsure) in the classroom every day* • *fantastic; wonderful opportunity* • *the fact that the PD was local, free and covered by teacher replacement costs was critical; not able to attend otherwise*

Further comments about the PD
These comments are put together by members of the evaluation team, based on field notes taken at the intensive, and focus group interviews and discussions.

1. Teachers were overwhelmed, challenged, interested, busy, and excited by the possibilities in the initial days. There was a strong sense that teachers felt they were outside their comfort zones but by the end of the week they felt more confident.

2. There was some sense of frustration in an inability to use the software the way they wanted. A technical support booklet “ICT for Dummies” was suggested by a few of the coordinators.

3. It may be that the duration of one week intensive is required for this PD – this gives time for learners to be extended beyond their limits and allowing time for some resolution.

   A: Interestingly, I remember on the Monday, I mean I was cautious, I’m sure you will, like ‘God we’ve got a whole week here’, ‘what are we going to do?’ but by the middle of Wednesday, the end of Wednesday, everybody said ‘It’s already Wednesday?’ ‘We’ve got so much to cover, we’ve got so much to do’, and when Friday arrived you thought ‘geez that really went quick’, and that’s unheard of for a PD, because often you feel like it drags on and it takes forever, but that felt like, my group felt certainly it went quick and they got a lot out of it.

4. Teachers enjoyed the interaction with other teachers afforded by the small group work – I enjoyed the interaction with the other participants and the transparency that is coming that allows “honest” learning. All coordinators expressed a desire to keep in touch.

5. There was a strong sense of achievement by all teachers by the end of the week, illustrated by blog comments:

   WOW I am going home with the positive feeling of ‘YES I CAN DO IT!!
   When I reflect on the new skills I have acquired I am so grateful for the opportunity to participate in this pilot study.
   The PD session has boosted my confidence and I can now use so many ICT tools and the numerous websites.

6. The experience of the intensive was very different depending on the incoming skill level of the trainer.

   Two of the teachers already had high skill levels and were able to more easily link in with the variety of programs and software being offered.

   Three of the teachers had low to middle skill levels (defined as being comfortable with internet use, email use, and using a range of computer programs)

   One teacher, however, had low skills, limited to email and occasional internet use. This teacher struggled with the amount of new information. Whereas for most of the others it was a steep learning curve, for her it was almost impossible to take in everything which was new.
7. There was recognition of the implications of the use of ICT for teaching approaches, and links with curriculum documents, with teachers expressing views like “You don’t have to be the expert”

8. There was some awareness of the issues that would be involved in training teachers back in participants’ schools. Some trainers had thought through how they would organise the training but most were more focused on what they would introduce in their own classes.

**Case One - Broadchurch College – Morris’ story**

Broadchurch College is a small ecumenical college situated in a coastal town in Victoria, Australia with a school population of 270 students. One of the senior science teachers, Morris, attended the professional development intensive training and became the coordinator for his school. He commented that it was the first professional development session he had attended in over two years. Due to financial constraints at the school and the cost of accommodation and travel, teachers were not able to access training at the nearest large city (300kms). Local provision of professional development was non-existent. “Teacher replacement funding was critical. Without that, I would not have been able to attend” Morris commented.

After his initial training, Morris inserviced two other staff in the science faculty. The recruitment of teachers occurred through the science teaching team and an invitation to undertake training. There was no additional support to the coordinator or the trainee teachers. There was an expectation that they would complete this training in their own time and that it should not impact on their ability to deliver the curriculum. Morris commented that there was “no overt encouragement” and that he hoped the new principal would be more “switched on” to change and ICT. Morris used the ICT to modify a unit on Forensic science which he and another teacher had delivered. However, his attempts to fully integrate ICT into his programs are hampered by policy and procedures within his school. For example, there is no ICT committee. Rather the computer technician makes all decisions relating to computer and web access. The technician restricts student use of the web by applying “nanny” systems across the board, in addition to the Department of Education safety systems. Teachers have full access to the internet, but cannot make use of its varied applications, simulations and information for student use. Morris is not only hindered by the internet access, but also by the way computers are physically set up at the school. The computers reside in a computer laboratory which is a traditional set-up relating to the “good old days” of typing pools based on skill acquisition. Rather than have computer access in all teaching spaces, so that every class can access the computer or internet as a learning tool, teachers have to book the computer lab in advance. Morris indicates the impracticality of this as well as the pedagogical disadvantages to students. Rather than computer use being a
seamless part of the learning environment, which caters for individual learning progression, it becomes a ‘chunk’ of the students’ experience. These limitations on computers in schools has been documented by research (Levin & Arafa, 2003, p. 15)

Morris commented that he found the professional development session gave him a much greater knowledge of software and systems which he could apply in his own setting. He found the collegiate atmosphere of working in small groups was crucial in providing a “good learning environments and spirit of cooperation”. In particular, he commented on how the PD provided him with an “almost-ready” set of skills to run with. He also commented on how he was now seen as a “guru” in his school, someone to talk to about ICT integration into curriculum. “...one of the indirect, but probably the best results has been that staff identify me as a possible helper...” He has been approached by other staff and has supported their efforts to change their teaching through the use of ICT. Not only is he seen as more approachable than the ICT staff, but his skills are those needed by teachers trying to adapt ICT to curriculum. Morris is hoping that with a change in school leadership, he will be in a position to offer his ICT skills to a greater number of teachers. It is clear from his responses that his capacity to deliver units of work using ICT has been significantly improved through attending the professional development.

In discussing the negative aspects of his work with ICT, Morris commented on: the age of the computers which could not support new software; the infrastructure did not support ICT use for teaching purposes; curriculum change was stagnant; the control of ICT by staff without a pedagogical background (students could not download any material from the web, could not print and could not use memory sticks). Such issues essentially stopped teachers from using ICT except in the most limited way.

In summary, whilst Morris was extremely successful in implementing changes in his program and in training 2 other staff, he experienced the following ‘blockers’

- The degree of remoteness reducing access to PD,
- resources/ facilities were outdated
- curriculum requirements not supported— e.g. Victorian Essential Learning Strategy promotes an integrated approach with ICT,
- the inclusion of ICT in programs of study – not supported by relevant staff
- expectations of the rural/remote teachers to do it without support
- nature of the school and its philosophical foundation – lack of committee to ensure ICT integration, much staff movement in/out of school causes uncertainty

Case Two - Aragon College – Janelle’s story

Aragon College Senior Campus, consisting of 400 students, is a co-educational day and boarding school located in the rich south-western region of Victoria,
Australia. It has a separate computer centre as well as computers located in each classroom and science teaching spaces (laboratories). It is also a Registered Training Organisation for Information Technology through the Vocational & Educational Training group. Each classroom has an interactive whiteboard and all teachers are supplied with a laptop or tablet for their exclusive use. There is an expectation that all teachers are comfortable using the technologies supplied. The computer facilities are overseen by a computer manager, and supported by a full-time computer technician.

Janelle is a senior biology teacher who has been developing her own skills in ICT through experimentation. After the PD intensive, she provided some PD to staff, through a half-day presentation. Further training has occurred in an ad hoc manner, but she indicated that between 50-60% of staff had increased or improved their computer applications. Despite having a high baseline of computing skills already, she claims that her own ICT skills and knowledge have improved significantly through undertaking the PD intensive. She is more confident to “trial and explore” the information given at the PD. In terms of her classroom use, she has found that she has both increased the amount of time she uses ICT and also increased the complexity of what she is doing “half of every lesson is ICT based...” The response from the students has been extremely positive. She comments “the learning is so much more, the uptake so much quicker...they are more focused, have more fun and are more engaged”. The students in her classes are increasingly engaged with the new technologies she is using and she is finding that students who were once reticent to participate are “jumping” in class. She has introduced a range of new initiatives to her classroom program- digital video, blogs and pod-casting for students.

Janelle attributes her success in implementing ICT into her curriculum to a number of factors. A contributing factor is the strong level of school support. The principal visited the PD on several occasions and has provided opportunities for Janelle to work with the other teachers. The upper administrative team (principal and leading teachers) have provided moral support through their ongoing encouragement when she initiates new things. The support from the ICT manager and technician has also made life much easier for her. Apart from their readiness to answer questions, any technical problems are usually solved within the same day. Another strong contributing factor was the PD itself. The PD “worked brilliantly” for her, providing her with significant self-motivation. She found the five days challenging but important to her “re-invigoration”. She saw it as the start of a bigger project in which she was committed to improving ICT in her classroom. She considered the ongoing contact with the consultant important in continuing to focus her energies towards attaining results. She has set up an ICT area network, developed from the original group, to provide support as members implement new ICT in their teaching. She envisages that it will expand. As she indicates, the PD training was only step one, where each person in the network take it from there, will depend on their own particular circumstances. However, for Janelle, the sky is the limit.
For Janelle, the project not only improved her already existing skills, but gave her increase motivation and enhanced capacity to implement ICT through validating her use of it. However, it is also clear that in-school support is high on her list of factors that continue to endorse her use of ICT. Student response to ICT has provided her with strong motivation through actually seeing her students increased engagement.

Conclusion

- What are the particular circumstances in these rural schools and communities that affect the use of ICT in teaching and learning?
- How successful is the intervention in achieving a positive change in:
  - Teacher classroom practice and understanding of the potential role of ICT to support learning and effective pedagogies relating to this?
  - Teacher and student attitudes to the use of ICT in teaching and learning?
- What aspects of the professional learning model embedded in the intervention have been successful in improving teaching and learning?

The successful uptake of ICT in classrooms depends on a complex of such environmental factors.

It was found, for instance, that some coordinators used the computers mainly as a word processing machines and little else, while others were already attempting to incorporate electronic learning into their curriculum delivery. Back in their schools, the coordinators introduced the professional development in a variety of ways and with a recognition of the variation in teacher ICT abilities. Some provided weekly sessions with curriculum examples, some prepared a CD sampler with suggested ICT use under different teaching situations, whilst others took a slower approach and provided training over 2-3 sessions. Their progress on this part of the project was tracked using blogs on each of the three hub sites. One of the difficulties coordinators experienced was the lack of self selection of teachers for this training. It will be argued that for this PD model to be successful, it needs to manage the dissemination of training in schools much more closely, providing explicit structures and encouraging school commitment to the process through more attention to schools feeling a sense of ownership of the particular innovations they put in place.

From these data sets it was clear that there were still some existing blockers to the successful implementation and integration of ICT into classroom use. The research has highlighted the inequalities in rural schools, in different locations and with differing circumstances, in terms of rural student access to the technologies they need to take up the promise of ICT for classroom learning, and communication. A number of reasons for this continuing inequality, and the impediments to progress in negotiating change in teachers’ practices in relation to ICT, are drawn out from the surveys and interviews with the participating
coordinators, teachers and students. They include, but are not restricted to, the impact of:

- degree of remoteness/ rurality,
- the size of the school,
- resources/ facilities available,
- teachers' ICT skill level,
- teachers' ability and confidence to integrate ICT in classroom,
- curriculum requirements – e.g. Victorian Essential Learning Strategy promotes an integrated approach with ICT,
- the inclusion of ICT in programs of study- add-on, carrot- motivator, reward, etc
- expectations of the rural/remote teachers, students and community,
- additional requirements placed on teachers,
- students’ learning, the impact of the PD on students’ learning, LE, attitudes etc
- nature of the school and its philosophical foundation, ICT culture (policies, leadership, collegial support)

Overall, the project contributed significantly to the knowledge of the use of ICT in rural schools and provides some insight into the practical implementation of ICT into the curriculum.

References


