

Interactive Whiteboard Trial, South Western Sydney Region: A report

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Executive summary

In 2006, the Centre for Learning Innovation (CLI) and RM Asia-Pacific Pty Ltd conducted an Interactive Whiteboard (IWB) trial in five schools in South Western Sydney Region. The trial provides a valuable case study for investigating the impact of these technologies on teaching and learning.

Three primary schools and two high schools were each supplied with an Interactive Whiteboard, a full suite of *Easiteach* software and training for nominated teachers. CLI provided professional learning sessions as well as online and telephone support throughout the trial. School visits and classroom observations were also conducted throughout the trial.

Each teacher was required to produce two lessons using *Easiteach* software per term and to complete three-monthly reports on their progress and issues with the technology. Four schools nominated a class which was monitored for changes in learning outcomes.

The trial established that teachers, with appropriate training and support, were able to use the Interactive Whiteboard to improve the learning outcomes of many of their students. Children with learning difficulties appeared to have the most benefit. Teachers developed more creative lessons and increased their use of multimedia and Internet based learning resources. Students displayed confidence and enjoyment in their learning and many of them improved their assessment results.

Overall, the trial indicates that Interactive Whiteboards have an important role to play in the classrooms of the future.

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Introduction

Rationale

Across the world, 750,000 Interactive Whiteboards (IWBs) have been installed in classrooms and over three million are forecast to be installed by 2010. Over the next four years all NSW DET schools will be provided with at least one Interactive Whiteboard. In the light of this wave of technology, the Centre for Learning Innovation (CLI) and RM Asia-Pacific Pty Ltd conducted a trial in 2006 to examine the benefits and issues in using IWBs. The trial was carried out as an action learning project with teacher-participants keen to identify and describe the impact of the technologies on their students' performance and their engagement in class activity.

Processes

Five schools in South Western Sydney Region were selected by the region for the trial. Three primary schools and two high schools were each supplied with an Interactive Whiteboard (Teamboard IWB - Analog-resistive style) and a full suite of *Easiteach* software. The projector and laptop were supplied by the school.

Each teacher was required to produce two lessons using *Easiteach* software per term and to complete three-monthly reports on their progress and issues with the technology. Interviews with participating teachers were conducted throughout the year. Each school nominated a class which was monitored for empirical changes in learning outcomes.

Interactive whiteboards

An IWB is a large touch-sensitive display panel. When connected to a data projector and computer, it allows a computer image to be projected onto the board. This image can be controlled by touching the board either by hand or with a special stylus, as well as by using the computer mouse or keyboard. The user can write, type or draw on the surface, then save, alter or print the image. The use of an IWB requires four components:

- the IWB
- a data projector (preferably ceiling mounted)
- a computer
- software.

Easiteach software

Easiteach is a teaching software product for creating lessons for any brand of IWB. It provides a wide range of cross-curricula teaching tools for both primary and secondary schools.

Conduct of the trial

Professional learning and support

Throughout the trial, three full day professional learning sessions were held at CLI for participating teachers ([Appendix 1 provides the schedule of professional learning sessions](#)). A trainer from *Easiteach* attended to teach skills in using the software and to participate in discussions about successful ways to use the IWB in the classroom.

Each school was visited at least twice by the CLI project officer and two after-school user group sessions were held. One school participated in filming and a live webstreaming event about the trial. Another teacher was able to attend a national IWB conference. Online and telephone support was also provided by the CLI project officer.

Teachers in the trial were presented with several sessions on accessing ready-made materials for the IWB through the Teaching and Learning Exchange, including CLI's resources, Le@rning Federation learning objects, and interactive lessons and manipulatives available on the Internet. The NSW Quality Teaching Model as well as current approaches to pedagogy and classroom practice were also discussed on several occasions.

Teachers in the trial were enthusiastic and willing to practise with the software outside school hours.

Practicalities

Environmental issues

Participating school principals supported the project and were keen to see the whiteboards used successfully in their school. However, there was a range of practical difficulties which made an impact on the trial. Despite this, most teachers felt sufficiently enthusiastic to continue and found ways to overcome or reduce the impact of these difficulties. For example:

Home room installation

Teachers at PS1, HS1 and PS21 had the board mounted in their own classroom, and therefore had access to the board for all of their lessons.

The teachers at HS2 and later PS3 did not have the board in their home room. This made it very difficult for those teachers to use the board consistently. However these teachers often used the *Easiteach* software without the interactivity of the IWB and still found the lessons productive and engaging. Both of these schools also had wireless tablets which are passed around the class for students to write on.

1 For the purposes of this report, the primary schools are referred to as PS1, PS2 and PS3. The high schools will be referred to as HS1 and HS2.

It was suggested that these could be used for interactivity when the board was not available.

Access to school equipment

There was some friction among other staff over the frequent non-availability of the laptop and data projector. One of the teachers at HS2 bought his own laptop and data projector so that he would not have to compete with other staff for the equipment.

One teacher at PS1 did not receive a dedicated laptop until late 2006 and therefore spent very little time using the IWB.

Internet access

The classroom at PS1 did not allow Internet access. Towards the end of the year, the teacher brought in her own wireless router to bring the Internet into her classroom.

Ceiling mounted data projectors

Ceiling mounted data projectors meant fewer cables and faster set-up time for the teacher as well as more room for teacher and students to move around in the classroom. PS2 did not get their data projector ceiling mounted until mid-2006. Up till that point the teacher and students had to take care not to bump the projector trolley.

Furniture arrangement and room size

Room sizes and furniture layout sometimes made it difficult for students to have easy access to the whiteboard. Particularly in primary classes there are occasions when all students should access the whiteboard together for whole of class activities.

Availability to attend professional learning lessons

There were days when teachers were not able to attend sessions because of events on the school calendar.

Access to interactive whiteboard

One of the teachers at PS1 did not have a working board until halfway through the year. She felt that she was too far behind the others to persist with using the board and withdrew from the trial. The teachers who came into the trial late from PS3 also expressed concerns that it might be too hard to catch up with the group.

Reliability and support issues

Several teachers mentioned that the laptop they were using with the IWB was slow or unreliable. It is obviously important that the computer is sufficiently powerful to make the board worthwhile.

A couple of the schools had problems with the boards and their software, especially with the implementation of the new DET portal. The service supplier for the trial² was usually able to rectify the problem within a day or two.

PS1 had its board mounted on a folding door and only attached to the door at the top of the board. The resultant swinging meant that the board was usually not well calibrated and became difficult to use. This hurdle was overcome with a large amount of Blu-Tack, which stabilised the bottom of the board.

Findings

Importance of professional learning support

Teachers appreciated the professional learning and support throughout the year. It helped to maintain their enthusiasm, consolidate and improve their skills and, most importantly, to share lessons and stories with the other teachers. Learning from others' successes and difficulties was an important part of the support process.³

We can conclude that schools will need to invest in professional learning opportunities if the potential of IWBs is to be realised. These opportunities should address not only the use of the equipment but also the design and presentation of appropriate teaching strategies. From the trial, it was apparent that regular use and interaction with other users are also factors in the successful implementation of IWBs in classrooms.

Changes to teaching practice

Several teachers commented that they had changed their teaching style since they started using the IWB regularly. They were conscious of being better prepared for lessons and felt that their lessons had become more student-centred.

Teachers were mindful of planning lesson sequences carefully with an eye to maximising the use of the IWB. They were also keen to challenge students with activities requiring higher order thinking skills. For example, one teacher created a history lesson in which students needed to debate several propositions and brainstorm possible solutions before writing their own essay.

One teacher found teaching with the IWB so effective that she was inspired to make an entire series of lessons on text types to be used by other teachers in the school.

Teachers also enjoyed the flexibility of being able to go quickly to websites to check information if the class discussion led to something unplanned.

Throughout the trial, using the IWB soon became a normal part of classroom operations for those teachers with an IWB installed in their home room. This was less possible for other teachers.

Lesson planning and delivery

Early on, creating lessons for the IWB required a significant amount of trial and error. However this early work was offset by reductions in preparation time by the end of the trial.

³ Studies in Britain have shown that schools with several boards were more successful because there were colleagues within the school who could share their expertise. This was not possible in most of the schools in this trial.

Throughout the year, it was evident that teachers' lessons were becoming more imaginative, colourful and interactive as they became more confident with the software and developed their skills in using the whiteboard. Several teachers became adept at finding relevant interactive resources on the Internet to add to their own lessons.

Teachers learned from each other and valued the meetings when they were able to share lessons and skills. The teacher who was able to attend a national IWB conference was inspired to create some different kinds of lessons from her usual style and to try some more advanced applications of the software.

It became obvious to the teacher participants how much they had learned over the twelve months when they realised that by year-end they were able to create whole lessons sequences quickly and efficiently. The Term 4 reports from teachers highlighted the speed with which they were then able to create lessons.

It is clear that teachers need time to develop their skills using the whiteboard and will learn more quickly if they have continuing reinforcement and encouragement from other users. Over time the teachers developed both their pedagogical and technological skills and increased their interest in exploring the potential of the Internet and Worldwide Web as aids for teaching and learning.

Student engagement

All teachers reported significant improvement in student engagement. Observation of lessons by the CLI project officer also indicated that class members were consistently attentive throughout the lesson.

Students in the trial were almost universally enthusiastic about using the board, and were very quick to pick up skills for manipulating objects and toolbars on the board. Teachers usually only had to demonstrate a new tool once for class members to be able to use it.

Several teachers said that quite often they relied on the students to overcome any hiccups with the operation of the equipment. At PS2, class members were responsible for setting up the laptop and turning on the data projector for each day's lessons. These students also helped teachers from other classes who came to try out the equipment.

Some teachers found that while boys were often keen to come out to the front of the class, some girls preferred being 'back seat drivers' by directing others to manipulate the board. They were still keen participants in the lesson without actually touching the board.

In group activities, students had to pay attention to the task by planning their answers and actions while awaiting their turn at the board. For instance, when completing a cloze passage (gap-filling activity), students were able to choose any gap to complete. This allowed less able students to choose a word that they were

confident with. The passage was completed, the class learned something together, and each participant had a successful experience.

Classroom observation and teacher reports indicate that the IWB enhances student involvement and attention to learning. Particularly in primary classes, students often used the whiteboard more frequently than the teachers. Some students even created their own lessons for use on the board.

Classroom management

Classroom management was also improved because teachers found that with the information already on the whiteboard, the teacher was able to move around the class, give more personal attention to students and to keep a better watch on the class. At HS2, students asked for the interactive lessons because they said they 'behaved better'.

Benefits for teachers and students

Teachers using the IWB stated that that they loved the advantage of being able to review and refer to previous lessons at any time. Also, senior students who missed classes were able to review lessons placed on the school intranet.

Greater student success appeared to affect confidence. Students in classes which used the IWB almost every lesson soon overcame the 'novelty factor' and recognised their own improved learning outcomes from using the whiteboard. They responded well to the immediate feedback provided by activities on the IWB.

Students noted the ability to recall earlier work that had been done on the whiteboard. One teacher reported the case of a Life Skills student who successfully completed an assessment test on cell structure because she was vividly able to recall labelling the cell in a lesson using the IWB.

Ease of use of *Easiteach* software

Easiteach software appears to have been well used by most of the teachers. The Windows-like operations and menus made it fairly easy for teachers to build on IT skills that they already had. One teacher was making interesting *Easiteach* lessons for her class even though her previous use of computers had been fairly limited. Other teachers regularly used the *Easiteach* software to prepare their lessons, even when the class could not be held in a room with an IWB. They reported that it is bright and attractive for junior students, and has toolbars and operations that are useful. However, one teacher mentioned that her senior students didn't appreciate the colour and movement, and 'just wanted to get on with learning the [maths] rules [for the exams]'.

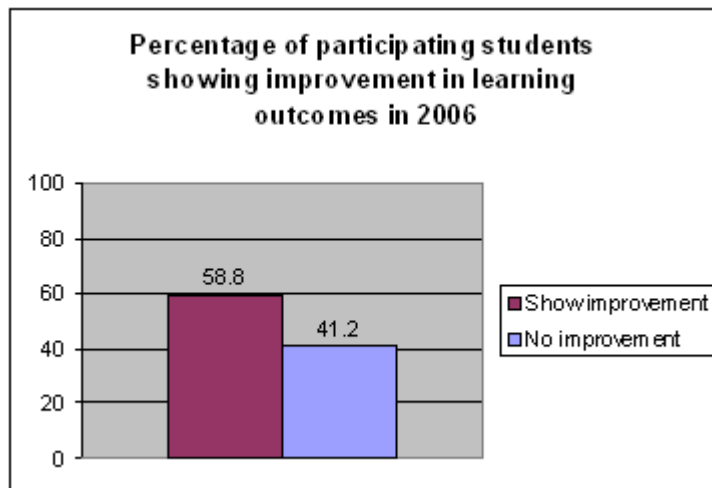
Student learning outcomes – Benchmark study

Four of the schools maintained a log of student learning outcomes. Students were graded as being below average, average or above average against stage statements. Throughout the year, each class had a significant number who improved their class results from below average to average and above average. (Appendix 2)

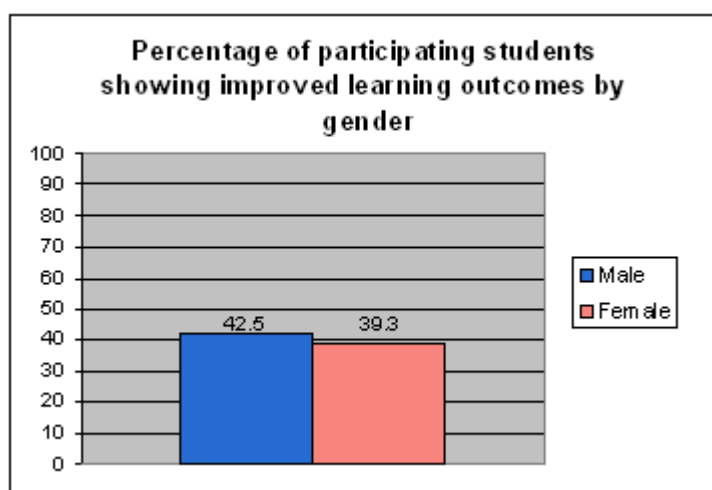
This study indicates that with sufficient training and support, these teachers were able to use the IWBs to improve the learning outcomes of many of their students. Results showed a marked improvement in learning outcomes for 59% of participating students, including 61% of students with learning difficulties.

The following diagrams provide further data:

A: Overall improvements in learning outcomes

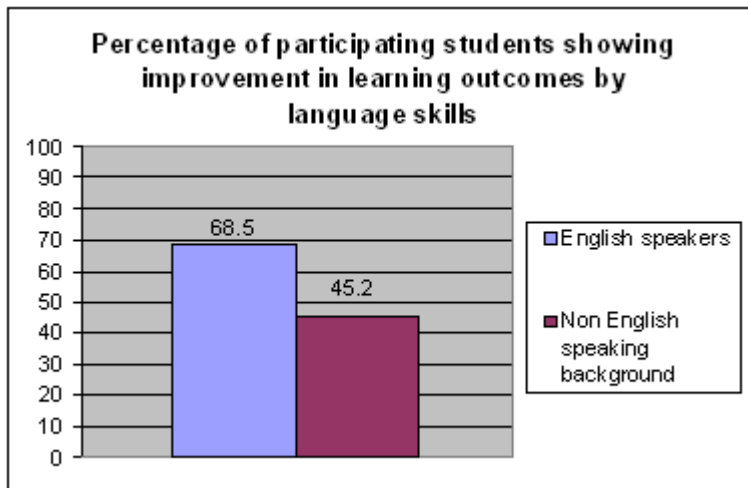


B: Improvements in learning outcomes – girls' and boys' performance



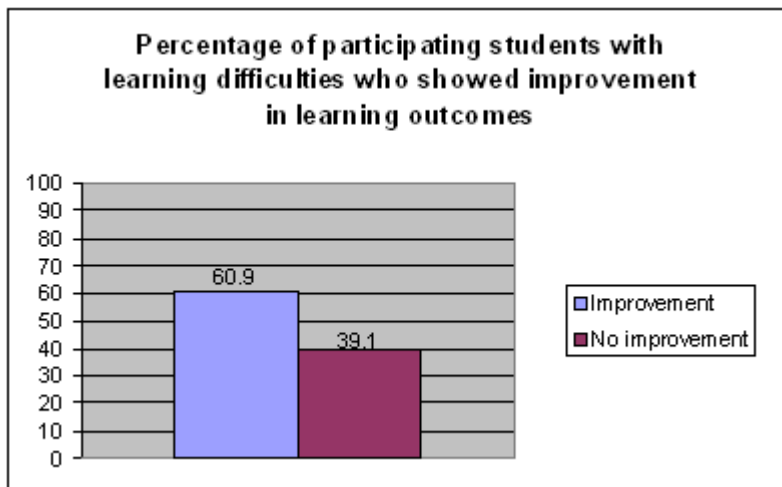
It was interesting to note that only slightly more boys showed improvement than girls although this was not statistically significant.

C: Improvements in learning outcomes – performance of students from English-speaking and non-English speaking backgrounds



Teachers recorded those students who came from non-English speaking backgrounds (NESB). It appears that NESB students did not improve their learning results as well as English-speaking students. Perhaps this indicates that a lot of the teaching, while more interactive, was still language based.

D: Children with learning difficulties – comparison of those whose learning outcomes improved with those who did not



One of the more significant statistical results (at the .05 level) was that 60.9% of students recorded as having learning difficulties with numeracy and literacy showed improvement. The hands-on nature of problem solving and the visual displays may have contributed to these improvements.

Teacher feedback

All teachers mentioned the increased pace of lessons and the speed with which some topics could be covered. This was especially noticeable for senior mathematics classes, who were able to see difficult concepts such as sine, cosine

and tan as manipulable 3D animations and understood the mathematics very quickly. A topic which would normally take several lessons to get whole class understanding had students using the calculations confidently after only one lesson.

A profound learning moment occurred when students said 'We get it, Miss!' after being shown how to work solutions for equations using 'magic' black and white boxes which graphically showed what happens to numbers when moved from one side of the equation to the other. These students used the same movements shown on the board to successfully work their solutions in a written assessment activity.

One teacher did baseline testing at the beginning of the year to determine the visual, auditory and kinaesthetic (hands-on) learners in her class. The kinaesthetic and visual learners showed marked improvement in their assessment results throughout the year.

Improvements in numeracy

One class did mental arithmetic problems at the beginning of every day from an interactive website. Student results improved from a class average of 6 out of 10 to 9.5 out of 10. Interviews with the students revealed that students themselves credited the use of the IWB and the regular use and 'fun' of the website for their improved results.

One Year 9 Mathematics class showed dramatic results from Term 2 to Term 4. The sheet on the page to follow shows results from three term tests given to the bottom two classes in the year. It was possible to use the second class (the students whose names are not highlighted) as a 'control' because they had the same assessment tasks. The students whose names are highlighted in pink used the IWB throughout the year. Some of these students improved their results dramatically and overtook students in the other class. The sheet that follows indicates this spread of performance in the assessment tasks over the three terms.

E: Sample data sheets of assessment rankings for two classes: raw data

SITE: [REDACTED] HIGH SCHOOL		TERM 2 EXAM
File: TEST19		
All students		
42 Students		
Task maximum		100
1 BM3 1	STUDENT	91
2 BM3 7	STUDENT	86
3 BM3 9	STUDENT	86
4 BM3 41	STUDENT	85
5 BM3 26	STUDENT	82
6 BM3 18	STUDENT	81
7 BM3 12	STUDENT	80
8 BM3 38	STUDENT	78
9 BM3 39	STUDENT	74
10 BM3 6	STUDENT	74
11 BM3 15	STUDENT	73
12 BM3 30	STUDENT	72
13 BM3 16	STUDENT	72
14 BM3 9	STUDENT	72
15 BM4 31	STUDENT	71
16 BM3 29	STUDENT	68
17 BM3 11	STUDENT	65
18 BM4 4	STUDENT	65
19 BM3 19	STUDENT	64
20 BM3 36	STUDENT	63
21 BM3 10	STUDENT	63
22 BM4 14	STUDENT	61
23 BM3 28	STUDENT	60
24 BM3 40	STUDENT	60
25 BM4 20	STUDENT	59
26 BM4 42	STUDENT	59
27 BM3 21	STUDENT	52
28 BM4 24	STUDENT	51
29 BM4 8	STUDENT	48
30 BM4 37	STUDENT	48
31 BM4 23	STUDENT	45
32 BM4 27	STUDENT	42
33 BM4 26	STUDENT	40
34 BM4 39	STUDENT	36
35 BM4 2	STUDENT	30
36 BM4 13	STUDENT	30
37 BM4 32	STUDENT	29
38 BM3 22	STUDENT	12
39 BM4 39	STUDENT	8
40 BM4 34	STUDENT	7
41 BM3 3	STUDENT	7
42 BM4 17	STUDENT	7

SITE: [REDACTED] HIGH SCHOOL		TERM 3 EXAM
File: TEST19		
All students		
42 Students		
Task maximum		100
1 BM3 41	STUDENT	93
2 BM3 16	STUDENT	93
3 BM4 4	STUDENT	91
4 BM4 21	STUDENT	87
5 BM3 7	STUDENT	85
6 BM3 12	STUDENT	81
7 BM3 8	STUDENT	81
8 BM4 27	STUDENT	76
9 BM3 25	STUDENT	71
10 BM3 29	STUDENT	71
11 BM3 20	STUDENT	70
12 BM4 2	STUDENT	67
13 BM4 20	STUDENT	67
14 BM3 43	STUDENT	66
15 BM4 14	STUDENT	64
16 BM3 6	STUDENT	63
17 BM3 1	STUDENT	61
18 BM3 38	STUDENT	61
19 BM3 18	STUDENT	53
20 BM3 19	STUDENT	53
21 BM3 28	STUDENT	50
22 BM3 9	STUDENT	50
23 BM4 24	STUDENT	50
24 BM3 21	STUDENT	47
25 BM4 33	STUDENT	45
26 BM4 8	STUDENT	44
27 BM3 22	STUDENT	43
28 BM4 17	STUDENT	43
29 BM3 19	STUDENT	37
30 BM3 16	STUDENT	36
31 BM4 27	STUDENT	36
32 BM4 42	STUDENT	29
33 BM4 36	STUDENT	18
34 BM4 13	STUDENT	18
35 BM4 34	STUDENT	9
36 BM3 3	STUDENT	8
37 BM3 36	STUDENT	8
38 BM4 32	STUDENT	8
39 BM3 35	STUDENT	8
40 BM3 11	STUDENT	8
41 BM4 26	STUDENT	8
42 BM4 23	STUDENT	8

SITE: [REDACTED] HIGH SCHOOL		TERM 4 EXAM
File: TEST19		
All students		
42 Students		
Task maximum		100
1 BM4 4	STUDENT	97
2 BM3 5	STUDENT	95
3 BM3 20	STUDENT	92
4 BM3 41	STUDENT	90
5 BM3 7	STUDENT	78
6 BM4 21	STUDENT	78
7 BM4 26	STUDENT	72
8 BM3 16	STUDENT	71
9 BM3 13	STUDENT	71
10 BM4 14	STUDENT	68
11 BM3 38	STUDENT	68
12 BM3 19	STUDENT	66
13 BM3 18	STUDENT	64
14 BM4 27	STUDENT	60
15 BM4 24	STUDENT	60
16 BM4 25	STUDENT	60
17 BM3 1	STUDENT	60
18 BM3 29	STUDENT	58
19 BM3 18	STUDENT	53
20 BM3 9	STUDENT	50
21 BM4 27	STUDENT	48
22 BM3 38	STUDENT	45
23 BM3 10	STUDENT	44
24 BM3 18	STUDENT	42
25 BM3 28	STUDENT	41
26 BM3 19	STUDENT	38
27 BM3 21	STUDENT	37
28 BM4 28	STUDENT	37
29 BM4 42	STUDENT	36
30 BM4 17	STUDENT	33
31 BM4 39	STUDENT	31
32 BM4 24	STUDENT	27
33 BM4 15	STUDENT	25
34 BM4 6	STUDENT	21
35 BM4 2	STUDENT	21
36 BM3 3	STUDENT	8
37 BM3 32	STUDENT	8
38 BM3 26	STUDENT	8
39 BM4 22	STUDENT	8
40 BM3 11	STUDENT	8
41 BM4 23	STUDENT	8
42 BM4 30	STUDENT	8

Conclusion

Overall, teachers who had the time, opportunity and motivation to use the IWB regularly have valued the changes it has brought to their classroom practice. However they acknowledged the need for comprehensive training, ongoing support and a reliable 'helpdesk' service for difficulties.

Students were almost universally enthusiastic about the board and there is good evidence of improved learning outcomes. The students recognised that their assessment results had improved and they became more confident and involved learners.

The trial has provided strong support for the use of Interactive Whiteboards in the classroom of the future. A range of practical and technical issues has been identified and the need for professional learning opportunities affirmed.

Further information

Schools and Regions interested to learn more about the use of IWBs and *Easiteach* software are invited to contact the Centre for Learning Innovation by emailing hilary.hughes@det.nsw.edu.au

Report prepared by Hilary Hughes, Chief Learning Design Officer, Centre for Learning Innovation.

Further reading

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Appendix 1: Methodology and chronology

October 2005 – Presentation

Principals of South Western Sydney Region were shown the capabilities of IWB technology and were invited to participate in the trial.

November 2005 – Orientation

Participating teachers and their principals came to CLI to become familiar with IWBs and their capabilities. Each teacher brought a laptop with the *Easiteach* software loaded and was introduced to some of the basic operations. There was also a session discussing the pedagogical implications of using the IWB in a classroom.

February 2006 – Training day for all participating teachers

The schools had had their boards installed and the teachers had spent some time experimenting with the software. It was necessary to review the basic operations of the software and then progress to some more advanced skill building. The teachers were encouraged to create a lesson that they would use in the next few weeks.

17–19 May 2006 – School visits

CLI project officer and *Easiteach* trainer visited HS1, PS1 and HS2. They watched a lesson in each school and then spent time discussing the use of the IWBs with the participating teachers. At PS3, the original teacher in the trial was promoted to another school. For this visit, the *Easiteach* trainer spent several hours with the two teachers who were taking over the school's participation in the project. Their advanced IT skills helped them to familiarise quickly with the software and hardware.

25 July 2006 – User group meeting

This meeting of participants (including the *Easiteach* trainer and CLI project officer) was held at CLI after school hours. Teachers asked the *Easiteach* trainer for help with technical difficulties and ideas for creative lessons.

26 July 2006 – School visits

CLI and the *Easiteach* trainer visited HS1 and PS2 and watched an IWB lesson in each school and then had further discussions with the teachers.

2 August 2006 – school staff meeting

CLI project officer visited PS1 to attend a presentation on the IWB to the whole staff.

10-12 August 2006 – IWBNet Conference

IWBNet conference: Enhancing Teaching and Learning with IWBs.

The participating teacher from HS1 attended the conference and presented some of her lessons at one session. She was able to attend the demonstrations of other teachers for the remainder of the two days.

7 September 2006 – Filming of lesson

One day of filming at PS2 for use as training material. The participating teacher's Stage 3 class was recorded using the IWB for a variety of lessons. Although the lessons were staged for the cameras, the students obviously used the board enthusiastically and competently. On-camera interviews were also conducted with a student from the class and the teacher of the Stage 3 class next door.

15 September 2006 – Webstreaming program on the use of IWBs

The PS2 teacher participated in a live question and answer session about IWB use. The video footage of her class was used throughout the program.

26 October 2006 – User group meeting

User group meeting at CLI after school

The *Easiteach* trainer spent two hours with the participating teachers who were able to attend. The wife of one of the teachers also attended because she had developed an *Easiteach* lesson on Maori language for students at her school and was keen to learn more about the software.

8 and 29 November 2006 – School visit

CLI project officer visited PS3 to work with the participating teachers. Another teacher at the school came to learn about *Easiteach*. This ESL teacher could see the huge potential of the IWB to improve the learning outcomes for her students.

1 December 2006 - Final training day

A member of the Connected Learning Team at CLI made a presentation on accessing CLI and Le@rning Federation (TLF) objects and other resources on the Teaching and Learning exchange (TaLe).

The *Easiteach* trainer was unable to attend on that day, so the group members helped solve each others' problems. Each teacher presented examples of their lessons and the results of testing throughout the year. The mathematics and primary teachers enjoyed the opportunity to exchange lessons and ideas with one another. Teachers also spent time with the CLI learning designers for the relevant subject areas, receiving further help and information about resources and embedding ICT into lessons.

Participation certificates were presented.

Appendix 2: Student Information data

Teachers were asked to record information about students at the beginning of the school year and in each 3-monthly report throughout the trial. The following data was provided:

Gender

M. Male

F. Female

Ethnicity

Skill level in English

1. Native English speaker
2. Speaks English as a second language
3. Poor grasp of English

Class attendance

1. Rarely absent
2. Occasional absences
3. Frequent absences

Learning difficulties

1. Literacy
2. Numeracy
3. Both Literacy and Numeracy

Behavioural/attention issues

1. Always 'on task'
2. Usually 'on task'
3. Rarely 'on task'

Level of achievement against stage statements

1. Above average
2. Average
3. Below average

PS1

Name	Male/ Female	Ethnicity	English language skill level 1 - 3	Class attendance 1 - 3	Learning difficulties ⁴ 1 - 3	Behaviour /attention 1 - 3	Achieve ment Term 1 1 - 3	Achieve ment Term 2 1 - 3	Achieve ment Term 3 1 - 3	Achievement Term 4 1 - 3
1. Child one	Female	Aboriginal	3	1	3	2	3	3	2	2
2. Child two	Female	Bosnian	2	1	2	2	3	2	2	2
3. Child three	Female	Chinese	2	1	Nil	1	1	1	1	1
4. Child four	Female	Anglo	1	1	Nil	2	2	2	2	2
5. Child five	Female	Chinese	1	1	Nil	1	2	2	1	1
6. Child six	Male	Anglo	1	2	Nil	2	3	3	2	2
7. Child seven	Male	Korean	2	1	Nil	1	1	1	1	1
8. Child eight	Male	Anglo	1	1	Nil	1	2	2	2	2
9. Child nine	Male	Chinese	1	1	Nil	1	1	1	1	1
10. Child ten	Male	Anglo	1	2	3	2	3	2	2	2
11. Child eleven	Male	Anglo	1	1	Nil	1	2	2	2	1
12. Child twelve	Female	Arabic	2	1	Nil	1	2	2	2	2
13. Child thirteen	Female	Anglo	1	1	Nil	1	1	1	1	1
14. Child fourteen	Female	Anglo	1	2	2	1	3	2	2	2 (Reading)
15. Child fifteen	Female	Greek	1	2	2	1	3	2	2	2 (Maths)
16. Child sixteen	Female	Aboriginal	1	1	Nil	2	2	2	1	1
17. Child seventeen	Female	Korean	3	1	Nil	1	2	2	1	1
18. Child eighteen	Female	Italian	1	1	Nil	1	2	2	2	2
19. Child nineteen	Female	Anglo	1	1	Nil	1	2	2	2	1 (English)
20. Child twenty	Female	Chinese	2	1	Nil	1	1	1	1	1
21. Child twenty-one	Female	Korean	2	1	Nil	1	1	1	1	1
22. Child twenty-two	Male	Arabic	2	2	1	2	3	2	2	2 (Maths)
23. Child twenty-three	Male	Chinese	2	1	Nil	2	2	3	2	1
24. Child twenty-four	Male	Vietnamese	1	1	Nil	2	2	2	2	1
25. Child twenty-five	Male	Korean	3	1	Nil	1	3	2	2	2
26. Child twenty-six	Male	Korean	3	1	3	1	3	2	2	2
27. Child twenty-seven	Male	Anglo	1	1	Nil	2	2	Overseas	2	1
28. Child twenty-eight	Male	Anglo	1	2	Nil	2	2	2	3	2
29. Child twenty-nine	Female	Korean	3	2	3	1		2	2	2
30. Child thirty	Female	Anglo	1 Poor	2	3	3			3	3

⁴ Students listed as having learning difficulties are those who scored below average on the YR 7 entry exams in literacy and numeracy.

HS1

Name	Male/ Female	Ethnicity	English language skill level 1 - 3	Class attendance 1 - 3	Learning difficulties 1 - 3 ⁵	Behaviour /attention 1 - 3	Achievement Term 1 1 - 3	Achievement Term 2 1 - 3	Achievement Term 3 1 - 3	Achievement Term 4 1 - 3
Student 4	F	Aust	1	1	2	1	3	1	1	1
Student 31	F	NESB	2	2	2	1	3	1	1	1
Student 20	F	NESB	2	1	2	1	3	2	1	1
Student 14	F	NESB	2	1	2	2	3	2	1	1
Student 37	M	AUST	1	1	2	1	2	2	1	1
Student 24	F	AUST	1	1	2	1	3	2	2	1
Student 27	M	AUST	1	1	2	3	3	2	2	1
Student 26	F	NESB	2	1	2	1	3	2	2	2
Student 42	F	NESB	2	1	2	3	3	2	2	2
Student 17	F	AUST	1	2	2	2	3	3	2	2
Student 39	M	NESB	2	1	2	2	3	2	2	2
Student 34	F	NESB	2	2	2	1	3	3	3	2
Student 13	F	NESB	2	2	2	2	3	3	2	2
Student 8	M	NESB	2	1	2	2	3	2	2	2
Student 2	M	NESB	2	2	2	1	3	3	1	1
Student 32	M	NESB	2	3	2	2	3	3	3	3
Student 23	M	AUST	1	3	2	3	3	2	3	3
Student 33	M	NESB	2	3	2	2	3	3	2	3

⁵ Students listed as having learning difficulties are those who scored below average on the YR 7 entry exams in literacy and numeracy.

HS2

Name	Male/ Female	Ethnicity	English language skill level 1 - 3	Class attendance 1 - 3	Learning difficulties 1 - 3 ⁶	Behaviour/ attention 1 - 3	Achieve ment Term 1 1 - 3	Achieve ment Term 2 1 - 3	Achieve ment Term 3 1 - 3	Achieve ment Term 4 1 - 3
Child A	M	Afghani	3	1	3	2	2	3	3	2
Child B	M	Afghani	3	1	1	2	2	3	3	3
Child C	M	Lebanese	2	1		3	1	1	1	1
Child D	F	Anglo	1	2		1	3	2	2	1
Child E	F	African (Congo)	2	2		1	1	1	1	1
Child F	F	Polynesian	2	2		3	3	3	3	3
Child G	M	Lebanese	2	2	3	3	3	3	3	3
Child H	F	Anglo	1	1		1	2	3	2	2
Child I	M	Lebanese	2	1	3	1	3	3	3	3
Child J	M	Afghani	2	2	2	2	2	2	2	1
Child K	F	Afghani	3	1	3	1	3	3	3	3
Child L	M	Polynesian	2	2	3	2	3	3	3	3
Child M	M	Syrian	2	2	3	2	3	3	3	3
Child N	F	Polynesian	2	2	1	2	2	2	2	2
Child O	M	Polynesian	2	1	1	2	2	3	3	2
Child P	F	Polynesian	2	2	1	3	3	3	3	3
Child Q	F	Polynesian	2	2	2	2	2	2	3	3
Child R	F	Afghani	3	1	3	2	2	2	3	3
Child S	F	Anglo	1	1		1	1	1	1	1
Child T	F	Polynesian	2	2	3	1	2	2	1	2
Child U	M	Anglo	1	2	1	2	2	2	2	2

⁶ Students listed as having learning difficulties are those who scored below average on the YR 7 entry exams in literacy and numeracy.

PS2

Name	Male/ Female	Ethnicity	English language skill level 1 - 3	Class attendance 1 - 3	Learning difficulties 1 - 3 ⁷	Behaviour/ attention 1 - 3	Achieve ment Term 1 1 - 3	Achieve ment Term 2 1 - 3	Achieve ment Term 3 1 - 3	Achieve ment Term 4 1 - 3
1. Child A1	F		1	1		2	3	2	2	2
2. Child B1	F	Indian	1	1		2	3	2	2	2
3. Child C1	F		1	1		1	3	2	2	2
4. Child D1	F		1	1		1	3	3	2	2
5. Child E1	F		1	1		1	3	3	2	2
6. Child F1	F		1	1		1	3	3	3	2
7. Child G1	M		1	1		2	3	3	2	2
8. Child H1	M		1	1		1	3	2	2	2
9. Child J1	M		1	1		1	1	1	1	1
10. Child K1	F		1	2	3	1	3	3	2	2
11. Child L1	F		1	2		1	3	2	2	2
12. Child M1	F	Arabic	1	3		1	3	2	3	2
13. Child M2	F		1	1	3	1	3	3	2	2
14. Child M3	M	Chinese	1	1		1	1	1	1	1
15. Child N1	M		1	1		1	2	2	2	1
16. Child O1	M	Chinese	1	1		1	2	2	1	1
17. Child P1	F		1	1		1	2	1	1	1
18. Child Q1	F		1	1		2	2	2	2	2
19. Child R1	F		1	3		2	3	2	2	2
20. Child S1	F		1	1		1	2	2	2	2
21. Child T1	F		1	1		1	3	2	2	2
22. Child U1	F		1	1		2	3	3	2	2
23. Child V1	F		1	1		1	2	2	2	2
24. Child W1	F		1	1		1	2	1	1	1
25. Child X1	M		1	1	2	2	3	2	2	2
26. Child Y1	M		1	1		1	3	2	2	2
27. Child Z1	M		1	1	3	1	3	2	2	2

Yellow Students who were high academically did not necessarily show a huge amount of growth.

Green Visual learners - students who were at risk academically of not meeting Stage Three outcomes or were not performing at their true potential. This group have improved significantly.

Pink Students who were performing consistently, but who benefited from the shift in classroom teaching towards allowing time to build field knowledge.

⁷ Students listed as having learning difficulties are those who scored below average on the YR 7 entry exams in literacy and numeracy.