

An Cláir Bhána Idirghníomhacha (The Irish Interactive Whiteboard Project): Key Research Findings

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Background and Context

During the academic year 2005-2006 a pilot Interactive Whiteboard project commenced in eight Dublin based schools. The Interactive Whiteboard Project or 'An Cláir Bhána Idirghníomhacha' as it is known as locally, is a partnership between the Drumcondra Education Centre, the eight participating schools and the project sponsors, the Computer Society of Ireland (CSI) and the Computer Education Society of Ireland (CESI) who funded one Interactive Whiteboard (IWB) per school and associated software. The initial eight project schools comprised three mainstream primary schools, three mainstream post primary schools, a primary Gaelscoil and one post primary school representing the special education centre – a school for the deaf.

Three different Interactive Whiteboards – 'Promethean', 'Smartboard' and 'Hitachi' were placed in the participating schools. Promethean boards were placed in the three mainstream primary schools while the other two board types were distributed across the remaining five schools. As only one board per school was provided, schools experimented with different deployments models varying from permanent fixtures in specific classrooms, to shared resources to dedicated IWB rooms. Each school assigned two teachers to the project who committed to take part in training, use the board for a substantial amount of their teaching and attend regular project meetings hosted by the ICT Advisor in the Drumcondra Education Centre who initiated the project. Towards the end of the project's first year of operation research support for the project was provided by a DCU academic, Dr Miriam Judge, who was awarded a research fellowship by DCU to conduct research on the project during the academic year 2006-2007.

Research Objectives and Data Collection

The main purpose of this research was to discover (a) what benefits Interactive Whiteboards brought to the teaching and learning environment in terms of their impact on both teachers and students, and (b) how closely the experience of Irish teachers with this relatively new technology matched those of their UK counterparts who were early adopters of IWB technology as a result of national policy initiatives to support the widespread implementation of IWB's in UK schools.

Research on the Irish IWB project was conducted using a case study methodology in accordance with the guidelines and recommendations of Stake (1995), Yin (1994) and Merriman (1998), utilising the following data gathering tools:

- Classroom observations of how IWB's were being used to support teaching and learning
- A series of in-depth individual interviews with key project personnel involving teachers, Principals and IT Co-ordinators
- Focus group interviews with students
- Focus group interviews with teachers not formally involved in the project but who had had the opportunity to use the IWB from time to time since it's arrival in their school
- Student surveys
- Attendance at project meetings and teacher training courses hosted by the Drumcondra Education Centre

In all the researcher conducted 87 classroom observations of IWB's in use throughout the academic year 2006/2007. These studies were conducted in 7 of the 8 participating schools and involved the researcher visiting each school one day per week over a period of 5-8 weeks where the researcher visited the classrooms of 2-3 teachers per school for one class period per teaching lasting on average 30 -45 minutes. In addition a total of 53 teachers were interviewed on either an individual basis or as part of a focus group set-up across all 8 schools and individual interviews were also conducted with 7 of the 8 school Principals and 1 Vice Principal. Each interview lasted approximately 40 minutes. Student interviews conducted for the most part in focus groups involved a total of 86 students in 7 of the 8 schools. These interviews lasted 20-30 minutes, with each focus group containing between 3 and 4 students. The youngest students interviewed were 3rd class primary school pupils whilst the oldest were 6th year leaving cert students. Student surveys were also completed by students not formally interviewed by the researcher.

All interviews involving teachers, students and principals were conducted using a structured interview format. The interview questions were conducted towards the end of the academic year after all observation studies had been completed. The interview questions were informed by the observation studies conducted by the researcher and by the UK findings on IWB's conducted by Glover and Miller (2002); Levy (2002) and Smith (2001) among others. All interviews were tape recorded and then fully transcribed for analysis.

Key Findings

An analysis of this 'triangulated' research data reveals that a number of positive indicators have emerged from the Irish IWB project. Findings indicate that Interactive Whiteboards have been well received and utilised by the participating teachers with notable effects on teaching and learning, ICT Integration and teacher professional practices and development. The study also revealed that interest in using this new technology has extended beyond the initial cohort of teachers formally associated with the project to include other staff members in each school including a number of teachers who are self confessed 'technophobes'. Interestingly the study also reveals that enthusiasm for Interactive Whiteboard technology is not just a teacher phenomenon but also extends to students whose views on the benefits of IWB's reveal strong correlations with those of their teachers. This correlation would suggest that Interactive Whiteboards when properly deployed in schools by enthusiastic and creative teachers who are well supported by their School Management and outside

bodies such as in this case, the Drumcondra Education Centre, have an important role to play in the twenty first century classroom.

At a more specific level the most significant data to emerge from teachers and students included the following:

More varied, creative and engaging classrooms: Teachers reported that the use of the IWB had led to greater variation in how subjects were taught and more creativity in how lessons were conducted resulting in more engaged, more involved and more motivated students. This was supported by their students who reported that lessons conducted with the IWB were more fun, more interactive and more interesting, requiring more involvement by students in the learning process.

An improvement in student concentration levels: Teachers reported that student concentration levels and attention spans increased when using the IWB. Most teachers believed that the highly visual and interactive nature of the IWB was responsible for this along with the increased freedom that the IWB brought to classroom learning particularly when allied to Internet access. Similar views were expressed by students who said that when using the IWB they pay more attention in class and that the IWB helps concentration particularly for students who find it hard to concentrate and who need lots of visual stimulation to learn.

Improved Lesson Planning: All teachers reported that using the IWB had led to an increased emphasis on the process of lesson planning. This in turn had led to teachers increasing the amount of time they devoted to lesson planning. Although many teachers reported spending up to 3 hours per night or more on lesson planning they felt that the benefits in terms of more interactive classrooms, more involved and engaged students and an overall improved pedagogical environment justified the extra effort involved. Because teachers were able to save and store their lessons for further re-use they also felt that the amount of planning time would reduce over time as their bank of resources increased and their skill levels with the technology improved. Teachers expressed concern however that the increased amount of planning time could potentially deter other colleagues from getting involved with IWB's.

The effort that teachers put into lesson planning did not go unnoticed by their students who commented that when using the IWB's their teachers were more organised and knew exactly what they wanted to do. Because students could visibly see the amount of work the teacher put into lessons from image capturing to the presentation of neatly typed up chapter summaries and notes to the fact that 'she downloads everything onto her USB key', students felt 'I really should listen to this because the teacher has gone to all this trouble'.

An increase in teacher motivation: Most teachers reported that using the IWB had led to an increase in teacher motivation. This can be largely attributed to the amount of creativity they could now bring to lesson planning and lesson delivery in their everyday classrooms as a result of the 'portal' capabilities of IWB technology and the attendant benefits for students. It would seem that when students really enjoy what's happening in classrooms where IWB's are deployed this in turn further motivates teachers leading to mutual benefits for both parties in the teaching and learning process.

An increase in student interest in previously disliked subject areas: Many students reported that the using the IWB had changed how they felt about different subjects which heretofore they found either difficult to learn or boring. Primary school students in particular who had the IWB permanently available to them in their classes singled out ‘Maths’, ‘Science’, ‘History’ and ‘Geography’ as the subjects which had particularly improved as a result of using the IWB.

Better ICT Integration: All teachers reported that the presence of an IWB in the classroom led to better and more meaningful ICT integration in their teaching. Teachers were unanimous in their views that the permanent presence of an IWB in their classroom was a far more useful device for increasing ICT integration in their teaching when compared to using a school based computer lab. This is because teachers feel that access to computer labs is restricted either through timetabling or resource constraints which in turn limits the amount of time ICT can be realistically deployed in every day subject and class teaching and learning. As one teacher succinctly phrased it ‘There is no contest between the school computer lab and the Interactive Whiteboard. I can use the IWB for teaching all subjects all day long so I think there is no comparison between them – the IWB wins hands down’.

This preference for using an IWB for learning compared to using the school computer lab was also echoed by the majority of students, many of whom felt that on the basis of efficiency, effectiveness and social interaction classroom learning facilitated by the IWB was a better way to learn. From what they reported it would seem that students like their teachers find the school computer labs a ‘difficult learning environment’. The students in this study at least seemed to find comfort in the communal learning experience, in the traditional notion of everyone moving more or less at the same pace as they learn and had a very strong appreciation of the crucial role that the teacher plays in the learning process. This was probably best summed up by one focus group who argued that ‘Learning from the Interactive Whiteboard is better than learning from the computer because the teacher explains and simplifies things on the board and so you understand them more’.

Conclusion

Although the deployment of Interactive Whiteboards in Irish schools is still in its infancy, it is clear from the teachers involved in this project that teachers and students have really enjoyed using this technology. By the time the field work on this project was nearing completion most teachers were dreading the thoughts of moving into new classrooms in the forthcoming academic year where an IWB might not be available to them and fundraising efforts were already under way in all of the participating schools to furnish more classrooms with IWB’s. While there are many factors contributing to this rate of adoption, probably the two most important to emerge from this research relate to their ease of use in classroom settings and the manner in which they enhance and enrich teaching and learning as a result of their visual, flexible and interactive capabilities.

Undoubtedly the types of schools involved in this project and the teachers associated with the project might be skewing the picture somewhat in that it is clear from the

research that the schools involved clearly have a high commitment to IT and the teachers are self-professed regular IT users. There is also the novelty factor – schools were also only in their second year of operation of this new technology when the main study was conducted. However these factors still do not fully explain why the IWB's appear to have captured the imagination of these teachers to such an extent, leading me to conclude that there are some intrinsic characteristics associated with the IWB itself which have contributed to this phenomenon.

While the jury is still out on whether Interactive Whiteboards will merely support or actually transform teacher professional practices leading to greater ICT integration and penetration, early evidence which emerged from Interactive Whiteboard projects in the UK (The Review Project; The Miranda.Net Project) and in particular the most recent academic study conducted by the Education and Social Research Institute at Manchester Metropolitan University (2007), the findings from which will be discussed by our next speaker, Maureen Haldene, a key researcher on this study, is encouraging. When taken together these studies seem to support the view that Interactive Whiteboards are easier for teachers to use in classroom situations and that they can lead to greater ICT integration accompanied by changes in pedagogic practice and student motivation. Although it is still early days in the story of Interactive Whiteboards in Irish classrooms, the evidence which has emerged from this study of 'An Cláir Bhána Idirghníomhacha' is pointing to similar patterns and results, despite many differences in our education culture and curricula. This at least suggests that some of the conclusions drawn from the UK experience to date, who have been well ahead of other nations in their deployment of Interactive Whiteboards, may in fact be relevant to other educational cultures and systems.