2005 'e-Learning Fellowship' Research Report

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2005 'e-Learning' Fellow

'DOES E-PUBLICATION OF CURRICULUM DETAILS AND SUPPORT RESOURCES ON-LINE AFFECT ENGAGEMENT IN THE LEARNING PROCESS?'

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MINISTRY OF EDUCATION
Te Tāhuhu o te Mātauranga

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Abstract

As a 2005 'e-learning' fellow I wanted to research whether on-line publication of curriculum-based material by a New Zealand Secondary School affected engagement in the learning process of Year 10 pupils. I believe that parents of secondary school pupils have too little involvement in their children's education compared to pre-school, primary and intermediate school age. I wanted, therefore, to see if this situation would improve if easier access was offered to specific details of the timing, content requirements and assessment criteria of one class project.

A complete Year 10 cohort at my school, Lindisfarne College in Hastings, New Zealand was involved in the case study, which included 86 boys, their parents and English teachers.

An interact learning management system separate from the school website was installed , and access arranged for all involved from the school computer network and from any computer with internet access outside the school gates. The system was transparent, so every pupil, parent and the 4 staff involved could see whatever was presented or added on the site. Exemplars, a calendar, milestone requirements, assessment criteria and complete project specifications were accessible. The case-study ran during Terms 2 and 3, 2005, and involved written questionnaires and group and individual oral interviews, to gauge responses before and after intervention.

The main conclusion was that the provision of such targeted on-line curriculum support does improve engagement in the learning process for both the pupil and parent groups involved, but that teachers do not have the time to devote to the interactive potentials of such support systems.

Background

As the Head of English and member of the Senior Management team at Lindisfarne College in Hastings, New Zealand, I am interested in how we can make our school more 'user-friendly' to parents. Several parents over the years have commented to me how their own involvement with their children's education progressively decreases as the pupils advance through the various education sectors. The following comment is typical:

'my wife and I were both deeply involved in our son's pre-school and primary education, helping with his homework, coaching sport and so on, but apart from helping with fund-raising, for some reason we aren't directly involved much at all with what he does in class at Lindisfarne'

Lindisfarne College is an integrated decile10 single sex secondary school with 416 boys, about half of whom are boarders. The parents, who pay fees, are keen to be involved in their sons' progress, and most boys enjoy internet access from home. Boarding families, especially, seem to value the contacts offered via the internet: the parents of boarding boys proved more likely (79%) to have accessed the normal College website than 'dayboy parents' (68%) in 2004.

Because of the above factors, I was keen to explore the effects of setting up an 'intranet' system exclusively to offer educational support for a group of pupils and their parents.

Definitions of key concepts

'e-Learning'

This project has two concepts at its heart: 'e-learning' and 'engagement'. Looking firstly at a definition of 'e-learning,' it is important to distinguish this term from the more widely understood 'ICT'. The term ICT (Information and Communication Technology) is seen as an holistic term for the tools and infrastructure that support and allow for 'e-learning', whereas the Government's 2002-04 Information and Communication Technologies (ICT) Strategy for schools defines e-learning as:

'…*flexible learning using ICT resources, tools, and applications, and focusing on interactions among teachers, learners, and the online environment. E-learning usually refers to structured and managed learning experiences, and may involve the use of the internet, CD-ROMs, software, other media, and telecommunications.*
Students are learning through ICT when it is used to promote their engagement in learning and when it provides them with opportunities to build on their information skills and critical thinking skills. ICT may also provide other learning experiences – for example opportunities for self-directed learning, collaboration with others, and creative use of interactive, multimedia technology.' [1]

To crystalise the above definitions, 'e-Learning' for this project is defined as 'learning facilitated and supported through the use of information and communications technology'.

International and national research clearly points to the fact that most students enjoy the new opportunities offered by this wide and ever-increasing range of e-learning opportunities. Most students enjoy working with computers, simply for the sake of it. A report of one Auckland school's 'laptop' project involving the students each using a laptop for work at home includes the comment:

'*A major positive learning outcome that parents did report was their daughters increased enjoyment of homework*' [2]

'*…students in 91 percent of the cluster schools and 85 percent of other schools reported that they enjoyed e-learning activities.*' [3]

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[1] 'Digital Horizons: Learning through ICT', Ministry of Education, 2003

[2] "An Evaluation of the St Cuthbert's Junior School College Laptop project", by Linda Selby, Sye Elgar, Ken Ryba, "Computers in NZ Schools" March 2001, Vol 13, No 1.

[3] 'E-learning in Secondary Schools' Education Review Office, Wellington, February 2005

'In 68 percent of cluster schools, students had developed transferable skills (for example, critical thinking, information literacy skills) through e-learning, compared with 61 percent of other schools.' [3]

However, schools where staff are more aware of how to incorporate e-learning and student engagement, (such as schools involved in the ICTPD Cluster Project), are more likely to encourage pupils not only to use, but to think about the ways they are using ICT. Students from New Zealand ICT 'cluster' schools enjoy e-learning opportunities just as much as pupils from non 'cluster' schools, but they have much more objective awareness of why and how such learning was beneficial. When it comes to making teachers and therefore their students more conscious of the gains to be made for their learning through ICT, the difference between 'cluster' and non 'cluster' schools is much more marked:

'Students could explain the benefits they gained from e-learning in 82 percent of cluster schools, compared with 61 percent of other schools.' [3]

'Students could describe experiences in e-learning that supported their e-learning goals in 73 percent of cluster schools, compared with 58 percent of other schools' [3]

Many New Zealand teachers have the ICT skills to assist pupils to use computers for basic research, word-processing, Power-point presentations and so on. In most cases, however, their teaching pedagogy has not changed in response to the paradigm shift which the digital revolution has brought. There is a tendency in secondary schools where the senior syllabus is still dominated by examinations for teachers to keep teaching in traditional ways, and merely find ways the computer can be used to support those old methods.

'..teachers in only 56 percent of schools had clear e-learning goals related to their teaching programmes…… teachers' effective use of e-learning to foster critical thinking and information literacy was evident in only 58 percent of schools. While teaching programmes that incorporated e-learning generally increased student motivation and enjoyment of learning, the extent to which teachers used e-learning effectively to support students' learning was limited.' [3]

Teachers involved in this research, for example, failed to take the opportunities for co-operative learning offered by the Interact site.

'engagement'

The definitions of 'engagement' differ slightly from text to text, but they all have at their heart the notion of 'meaningful interaction'. Kearsley and Shneiderman say:

'The fundamental idea underlying engagement theory is that students must be meaningfully engaged in learning activities through interaction with others and worthwhile tasks.' [4]

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[4] 'Engagement Theory: A framework for technology-based teaching and learning', by Greg Kearsley and Ben Shneiderman, Instructional Science and Development, 1999.

They emphasise that there are 3 important principles for 'engaged learning', which imply that learning activities:

- occur in a group context (Relate)
- are project-based (Create)
- have an outside authentic focus (Donate)

The particular teaching unit used in this project was chosen since it fulfils the above criteria better than other teaching units that were available at Lindisfarne College.

The unit is a feature of the Lindisfarne College English Department's Year 10 Programme. It is a Research project, where each boy is asked to find what year it was that their oldest living relative was the boy's age. If the boy himself is aged 14, for example, and his grandmother was born in 1930, he will research the year 1944. Each boy selects three key words to focus on, such as 'politics', 'education', and 'fashion', as they apply to his 'year'. The project requires each boy to source facts from a range of primary and secondary sources including libraries, family diaries, photographs, and the internet. Every pupils has to interview his elderly relative and record the replies, to include in the wider project.

Students are therefore asked to 'relate' most particularly to their grandparent(s) and parents, but also to their peers and their teachers for their Year 10 Research project. This involves communication, planning, management and social skills. In the words of a Year 10 pupil:

'it was interesting to look through the winning 2004 Research project from the 'interact' site, because I learned about how life in India and Indian-style weddings are totally different from the European way of things'

The second principle (the create component) makes learning a creative, purposeful activity. Students have to define the project and focus their efforts on application of ideas to a specific context. Conducting their own projects is much more interesting to students that answering sterile textbook problems. And because they get to define the nature of the project (selecting different 'key questions' for 'their' researched year), they have a sense of control over their learning which is absent in traditional classroom instruction. To quote two Year 10 pupils:

'I have selected 'world events' / 'fashion' / and 'leisure hobbies' for my year of 1944'

'Because my granpop was a farmer (and a good rugby player) the 3 keywords I will be focusing on are: 'agriculture' / 'transport' / and 'sport'.

The third principle (the donate component) of the literature on 'engagement theory' stresses the value of making a useful contribution while learning. In this respect, the Year 10 Research project matched this criterion in that each boy's project becomes an often much-valued addition to his family's archives. Many parents commented that their sons had succeeded in getting their grandparents to 'open-up' well in their interviews, perhaps because they were asked (for the first time?) deliberately and methodically to talk about their past with their own grandchildren The fact that a lot of the content and orientation of the projects depend on input from a grandparent means that each boy has 'buy-in' from his family, and this authentic learning context of the project increases student motivation and satisfaction. In the words of the mother of a Year 10 pupil:

'my husband and I were thrilled that [our son] elicited such detailed and deep replies from his grandmother. Of course both he and we had chatted about 'the good old days' before but this time she had a series of open-ended, planned questions to think about for sometime beforehand, her answers were interesting, and the resultant tape will be a welcome addition to the family memorabilia.'

While engaged learning can of course occur for any good teacher's pupils, technology can facilitate engagement in ways which are otherwise difficult to achieve in a traditional secondary classroom. Indeed Kearsley and Shneiderman see the two elements as inter-dependent:

'Engagement theory is intended to be a conceptual framework for technology-based learning and teaching.' [4]

However, since the collaborative methods necessary for optimal 'engagement' through ICT may be novel for many students and teachers, there is likely to be a high level of uncertainty at the beginning of such activities.

'Students will need guidance in working together, including skills such as project management, scheduling, time management, leadership, consensus-building, etc. Teachers will need practice in organizing and conducting collaborative activities, particularly the facilitative role that is needed. A lot of attention has to be devoted to ways in which student teams can most effectively present and share their results with each other. And both students and teachers will need training and support in the use of all online communication tools.' [4]

This wariness about adopting a new, more collaborative approach is reflected in such staff comments as:

'because I hadn't used the new on-line learning management system before, I was uncertain about how to best facilitate the boys' use of it. I guess I left it pretty much up to them without giving much guidance about working together because most often we stress the importance of 'developing independent work habits' at Lindisfarne'

In terms of the New Zealand-based research on how successful teachers have been in using e-learning to improve engagement\ the story so far is thus far disappointing. A comprehensive survey of pupils, parents, Boards of Trustees and ICT facilitators from 48 schools, in Terms 2 and 3 2004 by the New Zealand Education Review Office found that teachers have only recently begun to clearly and purposefully enhance their teaching practices with e-learning strategies:

- *'Most schools had developed their vision and direction for e-learning and had prepared policies and plans to support their stated direction. However, tangible links between the school vision and teachers' classroom practice were not always evident.*

- *While teaching programmes that incorporated e-learning generally increased student motivation and enjoyment of learning, the extent to which e-learning was embedded in teaching practice and supported students' learning goals was limited. The development of school-wide, cross-curricular integration of e-learning was still at an early stage.'* [3]

This pattern is reflected in the fact that the four Lindisfarne teachers involved in this project all say that they have thought little about such 'integration' of e-learning into their teaching. They tend to see computers as 'electronic encyclopedias', encouraging their students to find factual information from the internet, or as desk-top publishing tools to improve pupils' presentations. Put another way, what is important to them is the 'output' from the machines, not the 'input' teachers or their students may bring to the digital world offered via ICT.

'I tend to let my students loose on the library computers where they seem to easily find their own way around the internet, or to use software such as 'Publisher' and 'Word'. I don't offer much one-to-one assistance because often the boys know their way around computers better than I do.'

As a result, there is a feeling among staff that 'real learning' still occurs in the traditional classroom situation. Periods spent in the PC laboratory are seen as secondary (or even an interruption) to the 'normal teaching programme'. There is some critical commentary which would lend support to this notion. Associate Professor of Education at Ohio's Wittenberg University, Lowell Monke, writes in the October 2005 edition of 'Orion' magazine that 'deeper' learning is in fact put at risk by over-use of computers, saying that 'e-learning' replaces 'authentic' learning experiences with 'virtual' ones, stating that if ICT-

'crowds out direct, unmediated engagement with the world, it undercuts a child's education. Children learn the fragility of flowers by touching their petals. They learn to cooperate by organizing their own games. The computer cannot simulate the physical and emotional nuances of resolving a dispute during kickball, or the creativity of inventing new rhymes to the rhythm of jumping rope. These full-bodied, often deeply heartfelt experiences educate not just the intellect but also the soul of the child...' [5]

Monke goes on to say that the virtual adventures offered by *'the hundreds of impressive computer projects now taking place in schools'* kill a pupil's imagination, although he acknowledges that pupils now expect the constant sense stimulation they experience in daily life to be also offered in their classrooms. As one teacher put it:

'If we don't have the same number of periods at the computers as another class, the boys get a bit sullen. They enjoy the endless chances for instant control of a colourful screen in front of them'

In the words of the Lindisfarne librarian:

'The boys really enjoy the combination of visual and aural stimulation they get from computers. In the time they are allowed 'free time' after school, most spend it on accessing the most colourful, energized sites they can find. They clamour for head-sets to borrow so they can listen to the music and action sounds from the latest video-game or music video'

Monke warns against a school diet of too many lessons in front of a computer…

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[5] 'Breaking Connection: Are Computers changing Childhood Experience?', by Lowell Monke, 'Orion' magazine, September/ October 2005 edition, published by The Orion Society and the Myrin Institute, Massachusettes, USA.

'Sadly, many [teachers] readily admitted that, in general, their classes had to be conducted with the multimedia sensationalism of MTV just to keep them engaged. Having watched Discovery Channel and worked with computer simulations that severely compress both time and space, children are typically disappointed when they first approach a pond or stream: the fish aren't jumping, the frogs aren't croaking, the deer aren't drinking, the otters aren't playing, and the raccoons (not to mention bears) aren't fishing. Their electronic experiences have led them to expect to see these things happening—all at once and with no effort on their part. This distortion can also result from a diet of television and movies, but the computer's powerful interactive capabilities greatly accelerate it. And the phenomenon affects more than just experiences with the natural world. It leaves students apathetic and impatient in any number of settings—from class discussions to science experiments. The result is that the child becomes less animated and less capable of appreciating what it means to be alive, what it means to belong in the world as a biological, social being.' [5]

The comments of one Hawke's Bay teacher about the effectiveness of 'e-learning'…

'I doubt that the final end-of-year NCEA results of my Level 1 class would be any different had they not used a computer at all'

are echoed by a some teachers and critics such as Larry Cuban:

"There have been no advances over the past decade that can be confidently attributed to broader access to computers," said Stanford University professor of education Larry Cuban in 2001, summarizing the existing research on educational computing. "The link between test-score improvements and computer availability and use is even more contested." Part of the problem, Cuban pointed out, is that many computers simply go unused in the classroom. But more recent research, including a University of Munich study of 174,000 students in thirty-one countries, indicates that students who frequently use computers perform worse academically than those who use them rarely or not at all.' [5]

Most evidence from a review of the literature, however, points to the fact that judicious use of ICT improves the learning opportunities of pupils and can help their engagement in the learning process.

'ENGAGEMENT' AND 'e-LEARNING' AMONG PUPILS, TEACHERS AND PARENTS

(a) Pupil engagement and e- Learning

A 2005 New Zealand Education Review office report looked at the details of whether pupil engagement was influenced by 'e-learning' chances in Terms 2 and 3, 2004, among 48 secondary schools, and clearly shows its positive effects:

'In 71 percent of schools, the quality of teaching and integration of e-learning opportunities effectively facilitated student engagement in e-learning. In most schools, students:

- *reported that they enjoyed e-learning activities;*
- *had opportunities for self-directed learning using appropriate e-learning tools;*
- *could explain the benefits they gained from e-learning activities.'* [3]

From a personal point of view I have always been interested in the core phenomenon of 'engagement', and this interest has been confirmed over the years with the growing awareness of the metacognitive aspects of learning and teaching. This need for students to engage with their own learning is especially important when learning is seen as 'life-long', as distinct from earlier times when 'learning' was viewed more as the acquisition of a finite body of generic knowledge (the '3 R's). My opinion is supported in the four major education sector outcomes as prescribed by the Ministry of Education are:

- 'to provide all New Zealanders with strong foundations for future learning;
- to ensure high levels of achievement by all school leavers;
- to ensure that New Zealanders engage in learning throughout their lives and develop a highly skilled workforce; and
- to make a strong contribution to our knowledge base, especially in key areas of national development'. [6]

Regardless of their level of achievement at school, students who have learned to engage with learning are better equipped to participate fully in society as adults.

I believe that the engagement of secondary pupils in their own learning is an important factor in determining the quality and quantity of knowledge, skills and values they acquire during their lives and careers. Because of the 'knowledge explosion' and the rapidly-expanding digital world, it is accepted that much of the information needed by our future citizens will be sourced from the internet. It follows, therefore, that the more practice and success experienced by secondary pupils in 'engaging' with the internet for their learning, the more likely are those pupils to continue developing future life-long learning for themselves.

'The skills for information literacy in particular – provide a foundation for students to build on in later life, however well they achieve while at school. E-learning has the potential both to promote students' engagement with learning and to foster development of their information literacy.' [3]

Similarly,

'Because education's purpose is to prepare people for the world they will live in, it must be future focused' [7]

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[6] Report of the Ministry of Education for the year ended 30 June 2004)

[7] 'Catching the knowledge wave?. The Knowledge Society and the future of education', Jane Gilbert, (2005) p 123.

The notion that engagement in one's learning is enhanced when the person concerned is 'information literate' is supported by the American Library Association (1989) definition of the term:

"*Information literacy is the ability to recognise when information is needed and to locate, evaluate, and use that information effectively. Information literate people are those who have <u>learned how to learn</u>*".

One of the important tenets of my 30 years' teaching has always been 'to start where the pupils are at'. Increasingly, young people can be found 'at' a computer screen, and therefore I am interested in how secondary teachers in New Zealand can make learning and teaching relevant to 'generation-dot-com', as the current generation of teenagers has been called.

Once pupils have been enthused and engaged via e-learning with a particular classroom project, the difficulty is in teaching pupils the discrimination and self-awareness needed to apply those skills to their own independent learning. The 2005 Education Review Office report shows secondary pupils are lacking in this regard:

'There were fewer schools where students could describe experiences in e-learning that supported their e-learning goals, and where students could demonstrate that they had developed transferable skills (for example, critical thinking and information literacy skills) through e-learning'. [3]

(b) Teacher engagement and e- Learning

One reason why I wanted to undertake this research project is that I wanted to investigate how ICT could be adapted to support a small, tightly-defined unit of work from the curriculum to enhance engagement, since there is no evidence that the mere use of computers in schools actually enhances learning. International research shows that in many cases, the predicted improvement in some learning areas that many presumed would automatically occur as the 'knowledge wave' swept across the world, has not occurred.

E-learning is said to have great potential for improving quality, increasing access and reducing costs in post-secondary education and training. Yet the infrastructure and the human capital required to realise this potential is complex and often expensive. Furthermore, a cost/benefit analysis of e-learning compared to other delivery modes is often inconclusive.

In order to clarify the opportunities and challenges for institutions and governments seeking to provide e-learning, there is thus a significant need to take an evidence-based and realistic approach to the development and use of e-learning in post-secondary education. [8]

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[8] <u>Knowledge Management in the Learning Society</u>, OECD, 2000.

A 2001 report evaluating the Otago Secondary Schools Technology Project confirms this belief:

'many schools are unable to point to specific improvements in teaching and learning that have been brought about by the use of ICT' [9]

For ICT to most beneficially enhance teaching and learning, it needs to be fully enmeshed into what teachers are doing behind their classroom doors. In most New Zealand secondary schools, this has yet to happen. A 2003 New Zealand study concludes:

'The integration of Information and Communication Technologies (ICT) is seen as a priority by governments and schools here and overseas. Yet despite the resultant provision of infrastructure and professional development little appears to be happening in secondary school classrooms.' [10]

A review of New Zealand literature on the topic points to several reasons for this poor level of 'uptake' by New Zealand secondary teachers to integrate ICT into their lessons and planning. Even more than this, a big majority of secondary teachers has not begun to come to terms with the far-reaching changes caused by the digital revolution. They are continuing to teach in a traditional manner, simply relaying a pre-determined body of facts from (in the words of a 2000 New Zealand Research paper), the 'expert' to the 'novice':

'In relatively certain and stable environments, the emphasis on functional learning is on the transmission of existing and pre-defined knowledge from the 'expert' (teacher) to the 'novice' (learner). However, in uncertain, and especially in information-rich settings where the novel situation is commonplace and the information to be processed is ever-changing, then the relationship between teacher and learner frequently becomes one of collaborative inquiry. Here, the teacher's predominant contribution concerns the strategy students might use for accessing relevant information and processing it into knowledge.' [11]

The mere provision of professional development opportunities does not seem an important factor in predicting future ICT integration with classroom learning and teaching. Many NZ schools have spent considerable time and money offering wide and varied support and internal and external ICT PD time to their staff. Billowes (1999) notes that across the 23 ICT 'lead' schools in New Zealand, commonalities have emerged in PD being offered. These include:

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[9] <u>Learning with Technology: Evaluation of the Otago Secondary Schools Technology Project</u>, Kwok-Wing Lai, Keryn Pratt, Ann Trewern, The Community Trust of Otago, 2001, p 86)
[10] Teacher Practice and the integration of ICT: Why aren't our secondary school teachers using computers in their classrooms?' Lorrae Ward, The School of Education, The University of Auckland. [Paper presented at NZAE/AARE 2003]
[11] . <u>'Technology and the Coming Transformation of Schools, Teachers and Teacher Education'</u>(2000), by Philip Caper, Linda May Fitzgerald, Ward Weldon and Ken Wilson, in 'Tomorrow's Teachers: International Critical Perspectives on Teacher Education', Scott, A; & Freeman-Mir, J. Christchurch, Canterbury University Press.

'pedagogical change, focus on learning styles, multiple intelligences, new classroom practice and the concept of flexible learning'. [12]

Categories of inclusion of ICT into schools[13]

1. Installation	Provision of infrastructure and staff training
2. Administrative-Professional use	Limited computer use for reports, lesson plans etc
3. Integration into curriculum	Teacher-centred:-curriculum delivery eg web searches
4. Innovation	Student-centred:- new teaching and learning styles

Most schools seem to slowly progress through a sequence of ICT implementation,(see chart above),although this development is not necessarily sequential. To cite Ward,

'installation is an ongoing process and, given the nature of altering teacher practice…it is naïve to suggest or presume that administrative-professional use will lead automatically to integration and ultimately innovation. Similarly, early adopters of technology may move directly to innovation after the initial installation of infrastructure.' [13]

ICT is still seen as 'peripheral' to the teaching and learning that is occurring in most New Zealand secondary schools. A 2005 Draft Ministry of Education Report notes:

'Although there has been rapid adoption across the education sector, evidence suggests that institutions are still struggling to 'normalise' e-Learning as part of their education process*.' * [14]

Predominantly computers are being used either for teacher-based administrative tasks (such as timetabling, absentee lists and report generating), or as an electronic data-base of information for staff and /or pupils. A growing majority of secondary classroom teachers are using ICT in this limited way, as a tool for preparation. This national trend is confirmed by the use of ICT made by the 4 English teachers directly involved in this research project, all of whom said the main use they made of the internet was 'to access subject-related content material for my own reference'. A survey of all 40 Lindisfarne staff in 2004 which resulted in 16 replies showed only 8 teachers checked their email daily, and concluded:

'ICT use is not correctly aligned with the curriculum and learning processes of Lindisfarne at this point in time. Variations in ICT use are being caused by the variation in: staff ICT knowledge; ideas for using ICT within the classroom; time to develop skills; computer availability and lack of clear planning'. [15]

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[12] 23 ICT/PD schools lead the way, Billowes, N. Report, 02/09/1999. http://www.tki.org.nz/ICT/curriculum/initiatives01_e.php>.

[13] Teacher practice and the integration of ICT: Why aren't our secondary school teachers using computers in their classrooms? , Lorrae Ward, The School of Education, The University of Auckland. [Paper presented at NZAE/AARE 2003]

[14] An (e) Learning Framework for the Schools Sector, NZ Ministry of Education, Wellington, 2005.

Why, then, is there a patent lack of integration and innovative use of ICT in New Zealand schools despite the high level of installation? A review of the literature as to why teachers have not embraced ICT as a means and a catalyst to update their classroom practice suggests a range of reasons. Cuban and others suggest that this is because major changes in traditional teaching practice take a long time, and teachers are often jealous 'gatekeepers' of what occurs in their own classrooms, and will continue teaching in the way they think best despite the changing nature of 'best-practices' being advocated in a growing variety of professional forums, in-service courses, etc.

'The reality is that behind their classroom doors teachers can choose the level to which they are willing to comply with any reforms no matter how strongly mandated' [16]

The purpose behind this research was to see if a change in engagement in the learning process occurred when parents and pupils were more empowered to be involved in the learning process.

Ratio of education sector groups in 126 ICT Professional Development Clusters, 2005
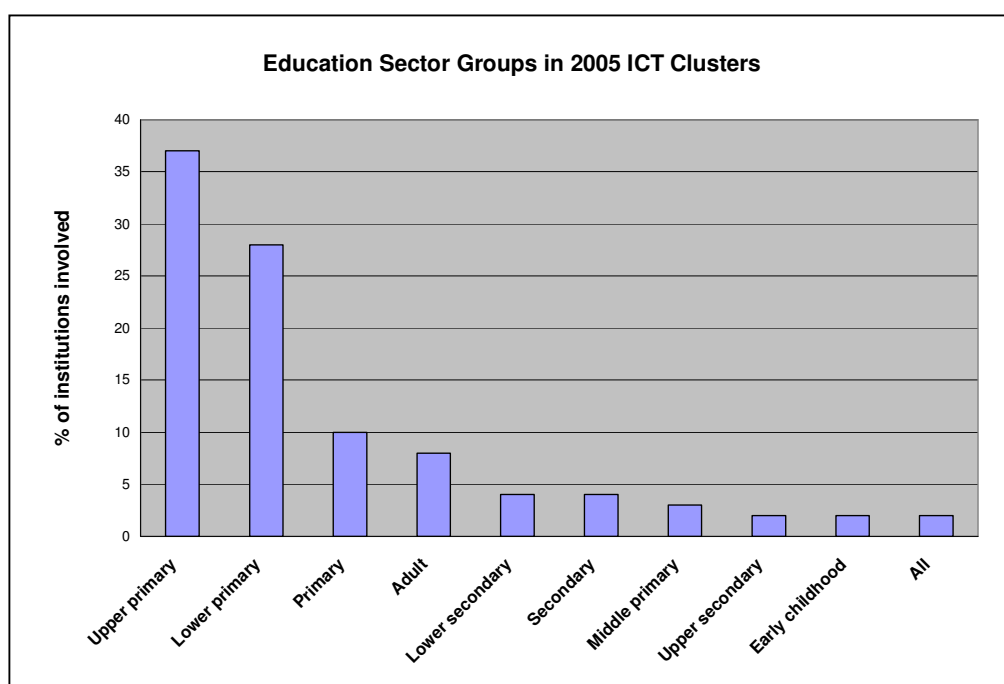
New Zealand secondary teachers as a group seem to be slower than their primary

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[15] <u>Lindisfarne College ICT Towards 2010</u>, an Operational Analysis', Yardley, Edward. Eastern Institute of Technology, October, 2004.
[16] <u>Oversold and Underused: Computers in the Classroom</u> ,Cuban, L., London, Harvard University Press, 2001.

counterparts to integrate ICT into their teaching practice, and this is reflected in the very low number of secondary schools involved in ICT Cluster groups. (see chart above). The Ministry of Education is now giving priority to secondary schools seeking to become ICT cluster schools, to help redress this balance.

I believe this trend is a reflection of the conservatism of age, (the median age of New Zealand secondary teachers is 46)and currently-held perceptions of secondary teachers that traditional teaching methods have stood the test of time.

Research shows that learner-centred teaching is more difficult to manage than traditional secondary school teaching styles. Jamie McKenzie notes that one reason for teachers preferring the traditional teaching style (a 'Sage on the Stage'), rather than changing to a student-centred approach (a 'Guide on the Side'), is because it is too stressful on teachers to change their old habits:

'Because student-centred learning can be time-consuming and messy, efficiency will sometimes argue for the 'Sage.' [17]

Several of the staff interviewed commented that there have been so many changes to the New Zealand secondary school English area (not the least as a result of moving to standards-based from norm-based assessments under NCEA), that it has not been an ideal time to introduce yet more change with ICT developments.

'I feel I am always being asked to change something about the way I teach.….we seem to be in a state of constant flux…we are being asked to use 'thinking maps' and 'habits of mind', and at the same time be more 'gender-aware', 'OSH- conscious', 'teach more of the basics' by some and to 'future-proof' our students by others. Sometimes I'm not sure which way to turn…Using ICT effectively is, frankly, not a big priority in a school where parents place so much importance on exam success rates'.

'The time now taken up with the demands of NCEA: seemingly endless assessments / reassessments; video-taping every student speech; moderating; data entries and so on.'

'The pressing need to motivate and help all my Level 1 students to reach at least 'Achieved' grades in their 11 Achievement and Unit Standards means it's very hard to find time to use ICT well in any of my senior classes'.

'The problem of the 'over-crowded-curriculum' has resulted in the time I have for actually teaching becoming increasingly precious, so I admit I have not done much to integrate ICT into my teaching day with much forethought'

Another reason why secondary teachers have been slow to engage fully with e-learning possibilities is that many of them see that ICT does not enhance their roles of imparting assessment-related knowledge. The comment 'Secondary teachers teach subjects while primary teachers teach pupils' is still a truism for many high-school teachers, all keen to help their pupils gain good NCEA grades. Most secondary teachers see it as their primary professional duty to pass over a prescribed body of

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[17] The Wired Classroom', by Jamie McKenzie, ('Enhance learning with technology').. [www.enhancelearning.ca]

subject content for pupils to apply in answering their NCEA questions. This approach does not rest well with the changes in teaching methods needed to integrate e-learning effectively, since, as an OECD report puts it:

'there now must be less emphasis on know-what and an increasing emphasis on know-why, know-how and know-who.' [18]

In conclusion, for the above reasons, the mere purchase of hardware does not seem to lead to teachers using ICT to enhance or change their teaching practice.

'Strategies at both a national and school level for the integration of ICT into New Zealand secondary schools appear to remain based on the assumption that as long as there is a well developed infrastructure and adequate professional development integration, and in some cases innovation, will follow. This theory of action, which can be described as 'build it and they will come'….is too simplistic.' [14]

My project confirms that secondary teachers have been slow, on their own admission, to change their teaching methods to use ICT to improve pupil engagement, despite professional development being offered. The 'water' has been provided for the 'horses', but so far, not many are 'drinking' from the new well, for the reasons I suggest above.

The majority of New Zealand secondary teachers have yet to come to grips with the point made by technology critic Neil Postman, *"What we need to consider about computers has nothing to do with its efficiency as a teaching tool. We need to know in what ways it is altering our conception of learning."*

An Education Review Office study of 285 schools makes the point that although high emphasis was given by schools to ICT PD, the reviewers were hard-pressed to see any concomitant improvement in teaching and learning, and they wanted to see *'a planned match of pedagogy with the identified purpose of ICT activities and learning outcomes.'*[19]

 The situation had only slightly improved in New Zealand secondary schools by 2005:

'Overall, teachers in 60 percent of schools demonstrated that they had the knowledge and skills to integrate e-learning effectively… Most schools (nearly 88 percent) provided teachers with opportunities to engage in ICT professional development activities. However, teachers in only 56 percent of schools had clear e-learning goals related to their teaching programmes, and there was considerable evidence of effective cross-curricular ICT integration in only 58 percent of schools. Likewise, teachers' effective use of e-learning to foster critical thinking and information literacy was evident in only 58 percent of schools.
While teaching programmes that incorporated e-learning generally increased student motivation and enjoyment of learning, the extent to which teachers used e-learning effectively to support students' learning was limited'.[3]

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[18] Knowledge Management in the Learning Society, OECD, 2000.

[19] The Implementation of Information and Communications Technologies (ICT) in New Zealand schools, Education Review Office, June 2000, Wellington

(c) Parent engagement and e-Learning

The research overwhelmingly demonstrates that parent involvement in children's learning is positively related to achievement. The current Minister of Education, Mr Steve Maharey, clearly believes this is so:

'It is not enough just to have parents turning up for school performances, they need to get actively involved in their child's learning so they can reinforce what is happening in the school. We need to create a situation where parents see themselves as part of the learning process.'[20]

The research shows that the more intensively parents are involved in their children's learning, the more beneficial are the achievement effects. This holds true for all types of parent involvement in children's learning and for all types and ages of students.

'A body of research (based on a review of some 41 articles and reports on varied aspects of parental involvement)by the Southwest Regional Educational Developmental Laboratory [21] found a positive and convincing relationship between family involvement and benefits for students, including academic achievement. Studies also concluded that students with involved parents no matter what income level, or background are more likely to have success in school'. [22]

Recent research literature also points to a corresponding and growing awareness of the importance of involving parents in more than just superficial (eg fund-raising) participation in their children's schools.

Useful parent engagement in their child's learning process involves the active participation of parents and requires strengthening the relationship between school staff, students, and parents, to reach a common goal. This concept is emerging in school communities as an important link to furthering student achievement. School management teams should be asking, 'How can the bridge between parents and teachers be strengthened in order to form a working relationship to support the student's overall development and educational experience?'

Until very recently in New Zealand, the parent community had no direct role within the school gates. Once basic decisions had been made, what actually happened to children when they went to school was largely regarded as none of the community's business. Since 'Tomorrow's Schools', however, New Zealand parents have become

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[20] Article, Christchurch 'Press' newspaper (1/12/05)

[21] . 'Parent Involvement in Education', **by** Kathleen Cotton and Karen Reed Wikelund **,** Office of Educational Research and Improvement (OERI), U.S. Department of Education, May 1989

[22] A New Wave of Evidence: The Impact of School, Family, and Community Connections on Student Achievement'. Henderson, Anne T. & Mapp, Karen L. (Austin, TX: National Center for Family & Community Connections with Schools: Southwest Educational Development Laboratory, 2002)

much more involved in their children's schools, but this influence has been limited to the school's overall governance and broad directions. This is despite worthy comments such as:

'We are committed to engaging parents in learning, and improving support for them' [23]

from Government ministers. Parents are unaware of what is taught to their children behind classroom doors. A Colmar Brunton poll in 2004, for example, found that of 1001 parents of New Zealand school pupils, 89% wanted more information on the quality of their teachers.[24]

What became clear from the parent interviews conducted for this research is that many Lindisfarne parents feel the school is quite 'closed' to them in regards the transparency of classroom-based activity. Some parents believe this is especially so in comparison to primary schools:

'I felt I could talk informally at any time to the kindergarten teacher, but as my son progressed up through his school levels, I definitely felt less confident about discussing his educational needs with his teachers…I understood less and less about what he was taught and how his work was assessed'

'Secondary schools don't seem to offer the same chances for parents to have input into their son's learning. A rushed 5 minute interview with his teachers twice a year is not the ideal way to learn about what our boy should be doing....Secondary teachers seem always so busy I don't feel I should take up their time arranging lengthy after-school interviews.'

Other parents commented that the increased complexity of subjects and assessments at the higher level resulted in less involvement in their sons' learning:

'…the subject content is much more demanding at secondary schools. At primary school I could ask his teacher at a Saturday sports game 'How's [his] 'reading' or 'maths' going?', but I wouldn't know what to ask about the 'Technology' or 'Economics', let alone "Physics' or 'Japanese' that he's doing at high school.'

'…I find the new ways of assessing in secondary schools (NCEA, etc) harder to understand than they were in primary or intermediate schools'

Some parents said that teenage boys tend not to volunteer much about what they did in class:

'I'm sure [his] teachers give him copies of the dates and assessments for his work, but he doesn't show us.'

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[23] From Hon David Benson-Pope, Associate Minister of Education, in launching the 'ed-Centre' education portal. Te Papa, 5/17/2005
http://www.beehive.govt.nz/ViewDocument.aspx?DocumentID=22036)

[24] Editorial, Sunday Star Times, 9/10/05, pg C100

Two of the ten sets of parents interviewed said that even though they knew little about the details of the teaching and learning that their son was experiencing at Lindisfarne, they were not concerned about that fact. They commented:

'we pay fees for high quality teaching and we think it's your job to know what you're doing, not ours. You're the professionals, we just support [him] to do his best in every area'.

'we both believe that an important part of our son's education as he grows up through secondary school is that he takes responsibility for his own action, getting work in on time, planning ahead , etc. If we get too involved, he'll never learn to stand on his own feet'.

Overall, however, the majority of parents at Lindisfarne College clearly believe that they lack understanding of and access to details of their son's learning. An important part of my research was that I wanted to find out whether providing this information for parents via an internet-based system would help. I wanted to explore whether on-line support material would be used, by which parents on their home computers. I was also interested in whether a secondary school could thereby help close the perceived information gap between classroom and home.

International research offers few examples of research into how parental behaviours towards pupil learning can be influenced from the schools involved:

'While the effects of home environments on school learning are significant and well documented in the research literature, evidence that learning can be enhanced by school-based initiatives to influence family behaviors is scarce'. [25]

These comments are supported by New Zealand research such as:

' ..The lack of community/parent understanding of the value of e-learning activities was reported as a problem by about one third of the schools'. [3]

Possible significance of this research.

Hopefully my research findings will be of interest to parents, principals and Boards of Trustees, teachers, and the Ministry of Education.

(a) Parents:

My findings may be of interest to various educational groups. I hope they are of interest to groups concerned with the level of parental involvement in their children's

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[25] The Effects of Comprehensive Parent Engagement on Student Learning Outcomes Sam Redding, Janis Langdon, Joseph Meyer, and Pamela Sheley .Academic Development Institute, November 2004Presented at the annual convention of the American Educational Research Association, San Diego, April 14, 2004.

learning, since the principles are currently not being effectively applied in secondary schools. Research points to parental engagement leading to better learning outcomes for pupils, and MOE publications strongly encourage the growth of such partnership:

'Communities help to establish an environment in which families have access to the services they need and where learners are mentored and encouraged' [9]

 Parents are now using the internet more for daily activities and in the area of schooling, some schools have tried to develop internet communication between parents and school for notices and information sheets. Tahatai Coast School in Tauranga experimented with a system of encouraging parents to email absent children's names to the school each morning but gave up the idea because of security and speed problems and now relies on parents to 'phone in absences.

It is especially important, I believe, for secondary schools to 'open-up' more to parents, since interviews with Lindisfarne parents show that whilst they are happy with the quality and quantity of information offered in newsletters about school activities and student achievements, most said they had little chance of accessing details about curricula, lesson content or assessment procedures. Most stated that their sons were sometimes reluctant to discuss such details with their parents and commented that five minute teacher-parent interviews held twice a year offered them little or no chance to find out about the teaching and learning 'process', and was mainly confined to a discussion on their son's 'progress'.

Although in countries such as South Korea both pupils and parents are deeply involved in e-learning, in New Zealand there has been little regard given to the role of parents in helping develop e-learning strategies for their children's schools. I have found, for instance, very few examples where responses to questions about 'e-learning' have been sought from such a complete one-year-level parent grouping from any New Zealand school such as is recorded in this project. This view is confirmed by other studies:

'Few schools appeared to have widely consulted their parent communities regarding community or student needs or preferences.' [9]

The Lindisfarne parents' 86 individual responses may well be of interest to other Boards of Trustees and parent groups, especially those directly involved in planning support strategies for student e-learning opportunities.

(b) Principals and Boards of Trustees:

My findings I hope will offer principals and Boards of Trustees useful data about what their students think of some aspects of ICT. This is a time when 'best-practice' educational philosophy seems to strongly support individual pupil 'empowerment' and 'self-management'. My own school has developed a very effective PD programme for staff and pupils fostering 'thinking skills' with a strong emphasis on the boys taking responsibility for their own learning. Lindisfarne has been part of Celia Lashlie's 'Good Man' project, and comprehensive staff professional development on Steven Covey's 'Seven Habits of Effective People' has taken place.

The main idea behind these strategies is to make staff and pupils more aware of how boys learn best, and adapt their teaching and learning accordingly.

It is ironic then, that Lindisfarne staff, like staff of many other schools, do not feel the need to ask their students about their own needs and wishes in the ICT area. Surveys have been carried out at Lindisfarne to determine the skill levels and ICT literacy of each boy, but they are not asked how they believe e-learning could best be used. Many schools leave the responsibility for decisions about e-Learning opportunities to an ICT committee or senior staff members. Researchers into the evaluation of the 'Otago Secondary Schools Technology Project' confirm this finding:

'Not one of the 45 students interviewed in the case schools [8 Otago secondary schools] had ever taken part in any type of questionnaire or interview relating to their perception of, interest in, opinions of, or need for information and communication technology at their school.' [9]

The opinions and experiences of the 86 Year 10 boys I observed will hopefully be of some use in guiding other schools, interest groups and educationalists in their e-learning policy and planning.

(c) Teachers:

My research hopefully will help show practising classroom teachers that e-Learning can improve engagement in the learning process for their pupils and parents. Thus far, little has occurred in the way of integration of ICT into the New Zealand secondary school curriculum by secondary teachers. To quote Ward:

'given the rhetoric linking computers with reform, very few changes in classroom practice have been made. Currently computers appear to be used more for strengthening current practice than as an agent of change' [10]

I believe teachers have to be shown how they can improve their teaching by using ICT more effectively. My research, grounded as it is on current pupil and parental attitudes from the present-day New Zealand educational scene,should help give teachers more evidence that such improvements are beneficial. It is accepted by teachers that for the years of compulsory education, the best learning grows from a healthy partnership between the school and the home, where parents and teachers are united in maximizing the quality of learning experienced by pupils. My research shows that most New Zealand parents are less involved with their children's education at secondary level than they were when their sons and daughters attended primary and intermediate school. My interviews and surveys clearly show this is firstly because parents feel that secondary school curricula and assessment criteria are less transparent, less accessible and more complex. Secondly it is because parents feel secondary institutions are less 'parent-friendly' and their staff more remote. I believe an easy way to help open up the communication lines between schools and homes is by using the internet. My research shows that providing parents with more details on-line about how and what a student is learning and how and what a teacher is teaching is appreciated by parents and leads to more engagement in the learning process. If teachers can remember this, they will hopefully be keener to move away from the current situation where most teaching and learning occurs behind closed class-room doors, where little or no parental involvement is asked for or wanted.

(d) Ministry of Education / Interest Groups:

My research results will be a small, but hopefully useful addition to the growing number of publications offering concrete evidence that 'e-learning' can improve learning. As noted by the Ministry of Education, there is a need:

'To increase the evidence base of e-L earning practices that make a positive difference to the learning of diverse learners and support a teaching culture or reflective and critical decision-making around e-Learning.' [26]

Because there have been very few e-learning research projects completed in New Zealand secondary schools which involve the pupils, parents and teachers from one complete Year group I believe my results will be of interest. The 'pre-' and 'post-' intervention case study method which I used gives a clear trends which should be applicable to other school communities, and other teaching units from various subject curricula.

Local content of this research

My own school's Rector and management have been keen to implement 'best-practice' in developing ICT for both staff and pupils. It was acknowledged by the Senior Management Team that there were a high proportion of long-serving 'traditionalist' teachers at the College who would perhaps be slow to change and adapt to new technology, so the Lindisfarne College Board of Trustees generously provided individual laptops (rent free) for full-time teaching staff in 2001, well before the Ministry of Education initiated the 'laptop rent scheme' for state school teachers. This saved Lindisfarne staff some $6-$7 a week compared to their local state school colleagues. It was also stipulated by the Board of Trustees and the school senior management team that the laptops would be provided for staff on the condition that each teacher volunteered to undergo Professional development in ICT. This has resulted in even the most conservative teachers at the school making giant leaps in their knowledge and application of ICT to their teaching. In the words of the school's itinerant ICT tutor, my mentor My John Phelps, of 'Tech Concepts',

'The Lindisfarne staff have made great progress by undergoing planned ICT PD. The staff is small enough in numbers for each staff member to have been able to learn individual skills which he or she believes will suit them the most. Most have enjoyed 'one-on-one' tutoring in ICT skills, so that after 3 years I can see enormous progress in the teachers enjoyment and use of computers in many aspects of school life. Now we see Faculty groupings of teachers setting 'across-the-board' ICT goals for Year levels, and teachers frequently swapping ideas for successful lessons they have enjoyed in the various PC labs or 'pods' around the school. Lindisfarne would now be one of the leading schools in the Lower North Island for the range of ICT application used by teaching, management and support staff.'

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[26] An e-Learning Framework for the Schools Sector, NZ Ministry of Education, Wellington, 2005.

In 2006 Lindisfarne will join Napier Boys' High School, St John's College and Hastings Boys' High School as a newly formed ICT 'Cluster', and my project will be of use to the lead teachers involved. The Cluster group of all boys' schools will be aiming to share resources and ideas on-line, using the Interact site I have used for my project. I am keen to use my knowledge gained this year to facilitate the sharing of on-line teaching resources within the 4 schools. I believe as Faculty heads in different colleges we tend to each 'reinvent' the same 'wheel' as we each co-ordinate new courses, assessments, exemplars and teaching units, and a regional learning management system such as 'interact' should allow for much more openness and sharing of resources between schools and teachers.

Summary of general questions and why they are important

As a 'case study' involving an intervention, the most important question was whether the intervention prompted any change in engagement. The two questionnaires completed by the 86 pupils, their parents and teachers concerned the issue as to whether their engagement in the learning process for this particular unit had changed with the introduction of the on-line support material. In classes I explained to the boys that the term 'engagement' was synonymous with 'enjoyment', 'work', and 'enthusiasm', which clarified the term so they were able to respond sincerely. By comparing the responses of the parents, for example, to the question from the first questionnaire (March 2005) to the responses to the question from the second questionnaire (October 2005), a clear picture of parent attitudes was revealed:

Pre- and Post- intervention questions for parents

"Describe the amount of your parental involvement (from either <u>or</u> both parents) in your son's last year's (2004)Year 9 Research project"

1. ☐ None at all   (Tick one box)
2. ☐ Some involvement
3. ☐ Strong involvement

"How did the provision of the new 'interact' site affect your level of parental involvement in your son's <u>2005 </u>Year 10 Research Project <u>compared to the level of your involvement in your son's 2004 research project?"</u>

4. ☐ Providing the 'interact' site **reduced** my level of involvement
5. ☐ Providing the 'interact' site **made no difference to** my level of involvement
6. ☐ Providing the 'interact' site only **slightly increased** my level of involvement
7. ☐ Providing the 'interact' site **increased** my level of involvement
8. ☐ Providing the 'interact' site **greatly increased** my level of involvement

# METHODOLOGY

General outline

My theoretical framework is based around the classical 'case-study before and after intervention' model in that I observed what people did before the context of their action was altered. (In this case before 'on-line' curriculum support material was provided). After I altered that context I observed the behaviour of the three groups involved and asked them to articulate what they experienced from the difference: the sense and meaning they took from the new data and material and the differences that occurred in their behaviour in relation to pupils, teachers, parents and the school. I looked at the

- Cognitive impact (did the 3 groups understand the nature and purpose of the intervention?)
- Behavioural impact (what did the 3 groups *do* in response/reaction to the intervention?)
- Developmental impact (what changes to expansive learning trends occurred in terms of information push/pull)

Research Design

This study focuses on the effects on teaching and learning when on-line support material is provided for a specific teaching unit for a cohort of Year 10 boys at a New Zealand boys' college. The on-line support an Interact site containing a series of pages offering guidance about the Lindisfarne College Year 10 English Department Research unit. (see below):

An Interact site allowed all Year 10 Lindisfarne pupils to access on-line support.
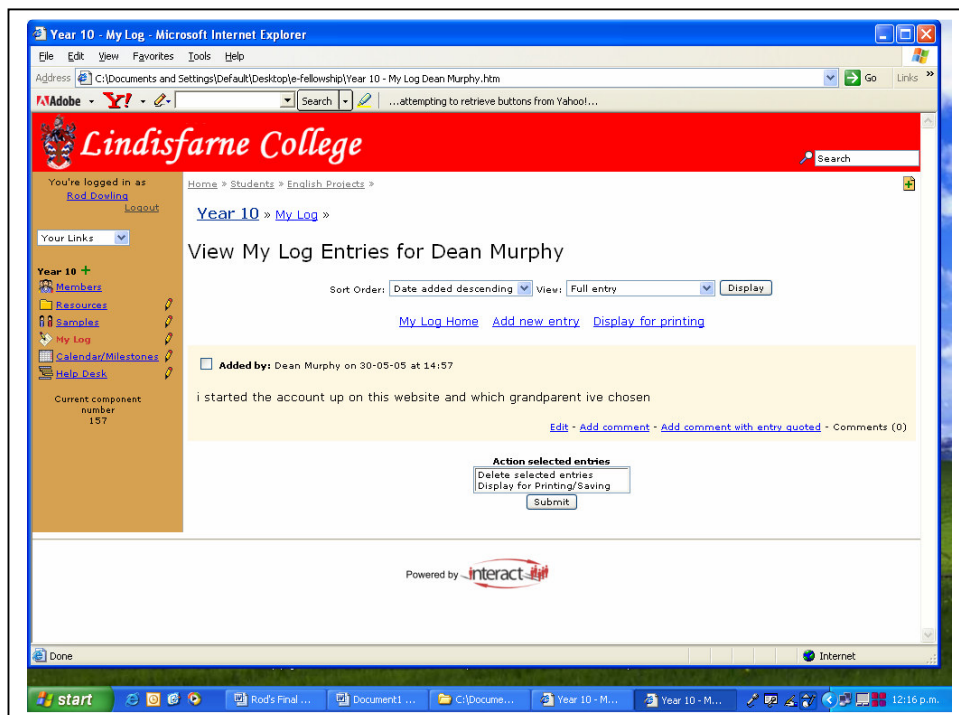
The purposes of the study are three fold:

1. To see whether on-line support material effects engagement of the following groups in the boys' learning:

      i.   pupils
      ii.   their parents
      iii.   their teachers

 2. To look at possible explanations for the effects on engagement observed and described.

Data Sources

Quantitative

Parent Questionnaires

In March 2005 I posted out a three page questionnaire and ethical permission slip(see Appendix) to all 86 sets of parents of Lindisfarne College year 10 pupils. After the stated return date of 31st March, I posted a second copy to those parents who had not yet replied, and reminded them about returning their answers in consecutive 'Rector's newsletters', and the College website. Although I subsequently had to spend some time contacting a few parents, and the final reply came in on August 22nd, I finally obtained 86/86 responses, a 100% return rate. This is very pleasing, perhaps reflecting the keen involvement in their sons' education by the majority of the Lindisfarne parents. It was also important to get a full response, in the light of research that shows that a distorted picture can result from an incomplete response from the parent group. There has been little research on how school's can influence parents' attitudes towards their children's learning, and:

*'this may be the case because parent engagement programmes tend to be……
primarily inclusive only of parents who choose to participate in activities at the
school'.* [27]

In October I posted out a second questionnaire to the same 86 sets of parents.

Pupil Questionnaires

 In March I supervised each of the 86 Year 10 pupils in their English classes, as they completed a 2 page questionnaire (see Appendix), and in October I supervised their completion of a follow-up questionnaire.

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[27] <u>The Effects of Comprehensive Parent Engagement on Student Learning Outcomes:</u> Sam Redding, Janis Langdon, Joseph Meyer, and Pamela Sheley
Academic Development Institute, November 2004Presented at the annual convention of the American Educational Research Association, San Diego, April 14, 2004.

Each of the 4 Year 10 English teachers were interviewed at length and each completed a detailed questionnaire during April-September.

Qualitative

Parent Interviews:

I carried out interviews (20-40 minutes' in length) with 10 randomly-selected parents, which were each recorded and transcribed, during April-September. Each parent was asked the same questions, as well as being offered the opportunity to make spontaneous informal comments about e-learning as they wished.

Pupil Interviews:

I carried out interviews with 20 randomly selected Year 10 pupils, and set-up 5 focus-groups which I also interviewed, recorded and transcribed, during April-September. Each boy and focus group was asked the same questions as well as being offered the opportunity to make spontaneous informal comments about e-learning as they wished.

Teacher Interviews:

I carried out lengthy interviews with the four English teachers involved and recorded and transcribed their replies.

Other interviews:

I interviewed several other educationalists from other sectors, including lecturers from the Auckland University of Technology (AUT), and Massey University about their experiences with e-learning and on-line publication of support material for their students.

INTERNET ACCESS

International

Information technology, including the use of computers and the Internet, is increasingly commonplace in New Zealand homes and workplaces, just as it is in most countries in the developed world. A July survey showed more than 78% of children in the USA aged between 12-17 go online to use the Internet in a variety of ways. They:

- Use the Internet as a virtual textbook and reference library
- Use the Internet as a virtual tutor and study shortcut
- Use the Internet as a virtual study group, to collaborate with classmates

- Use the Internet as a virtual notebook [28]

New Zealand has one of the highest rates of Internet access in the world. In 2002, it was ranked eighth in the OECD for number of Internet users (per 10,000 population) (International Telecommunication Union, 2003). New Zealand Statistics Department reported that in March 2005,

'There were 30 subscribers per 100 inhabitants in New Zealand. As a comparison, Australia had 29 subscribers per 100 inhabitants at the same time'. [29]

The success of any on-line support systems such as Interact that are aimed at parents and pupils depends on the quality of such access. It is not only the quantity of internet connections available in homes and schools that is important, but quality of this access is also vital. Despite relatively high rates of internet access, the uptake of broadband internet access in New Zealand is surprisingly poor. Compared to the USA, for example, we fare badly. In February 2004, nearly 75% of U.S. households had Internet access at home, a 9% increase from 66% in 2003. More importantly for this project, of these, 45.15% of Internet-connected U.S. households enjoyed a high-speed connection. Extrapolating the data provided by Nielsen//NetRatings, it can be estimated that broadband share in the US should exceed 50% by June of 2004

Internet connection speed trends in USA homes 1999, 2006 [30]
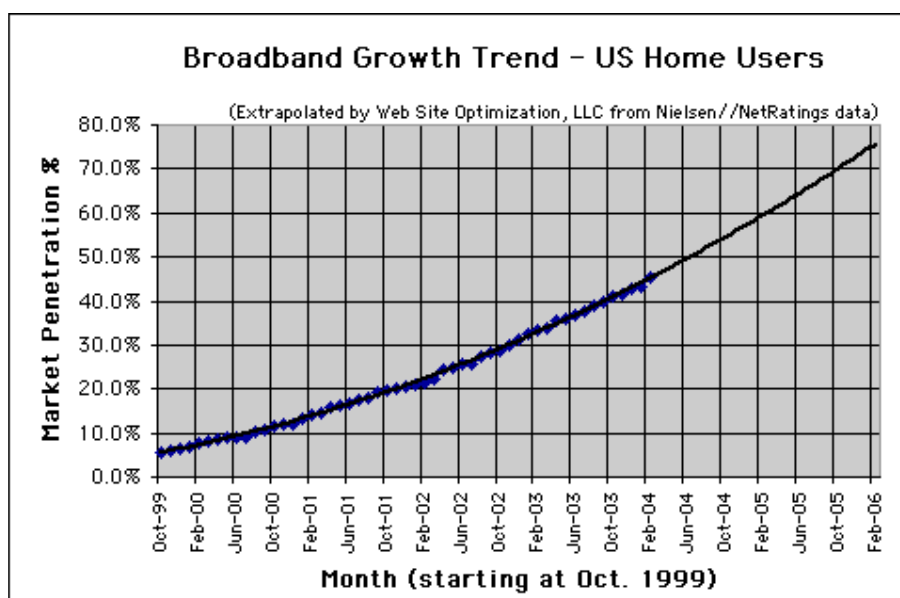
Because of such fast growth in broadband access, some countries are putting the quality of internet access before quantity of customers. Many Asian nations consider the provision of broadband access a priority. Even though rural areas of South Korea lack internet access, the government's priority is to offer the fastest connection to the

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[28] Internet Project Survey of 2501 American pupils conducted between June 26 and July 26,2002.[*http://www.pewinternet.org/reports*]

[29] 'Hawke's Bay Today' newspaper, August 27th, 2005, p9. Hastings.

[30] Source: Nielsen//NetRatings

increasing number of citizens who can access the internet from homes, businesses and schools. One comment made by Dr Myung-Sook Pang, of Keris (Korean Educational and Research Information Service), at the '2nd International Innovative Teachers' Conference' in Seoul November 2005 was, *'we consider providing broadband internet access to all citizens as important as providing water, sewerage systems and electricity.'*

There has been a similar high growth in higher speed 'non-dial up' connectivity across the Tasman. (see chart)

Internet Subscribers in Australia, by access technology.[31]
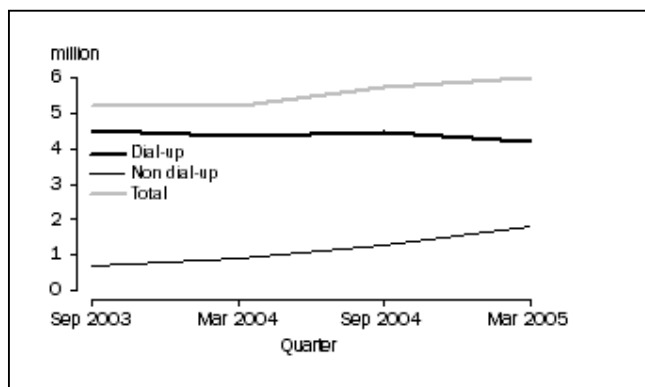
Unfortunately, New Zealand has been comparatively slow to follow Australia and the US in broadband connectivity. High-speed (broadband) internet access is important for the most effective access to any on-line learning management system. High-speed internet connectivity from both school and home allows faster downloading of files for both pupils and parents. This will become more important if 'graphic-heavy' support material is offered on-line. The 'Best research project of 2004' offered as an exemplar on the Lindisfarne interact site was very slow to download for parents whose internet connection was slow. One parent commented:

'we enjoyed reading through the 2004 winning project published on the interact site but it took over 10 minutes of waiting before it was viewable'

A June 2005 survey published in 'The Dominion Post' newspaper showed that 'most kiwis are sticking with dial-up', and included the comment:

'New Zealand has failed to improve its international ranking for high-speed Internet uptake, remaining a lowly 22nd in an OECD league table measuring its take-up by households' [32]

In the same article, Telecommunications Users Association executive director Ernie Newman says:

'The hard fact is that this technology is taking the world by storm and, while we continue to sit near the bottom of the OECD, we are at a major disadvantage.'

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[31] Source: Australian Bureau of Statistics, July 2005

[32] **'Kiwis stick with dial-up'**, 'The Dominion Post' Newspaper, October 24th, pg C1.

In the past two years New Zealand has remained stuck in 22nd place out of 30 nations for broadband connectivity.(see chart below). To reach the Government's stated goal of getting us into the top quarter, Labour, as part of its 2005 election promises, said it would pressure Telecom to improve its record in providing faster wholesale internet services to ISPs, aiming at $30 a month rather than the current market average of $40. One reason why parents are slow to change to broadband is because unlike most other countries, New Zealanders enjoy free local telephone calls, so there is more incentive to stay on dial-up. This is a factor for schools to remember when schools are considering setting up an on-line support system for pupils.

OECD Broadband subscribers per 100 inhabitants, June 2005 (OECD)
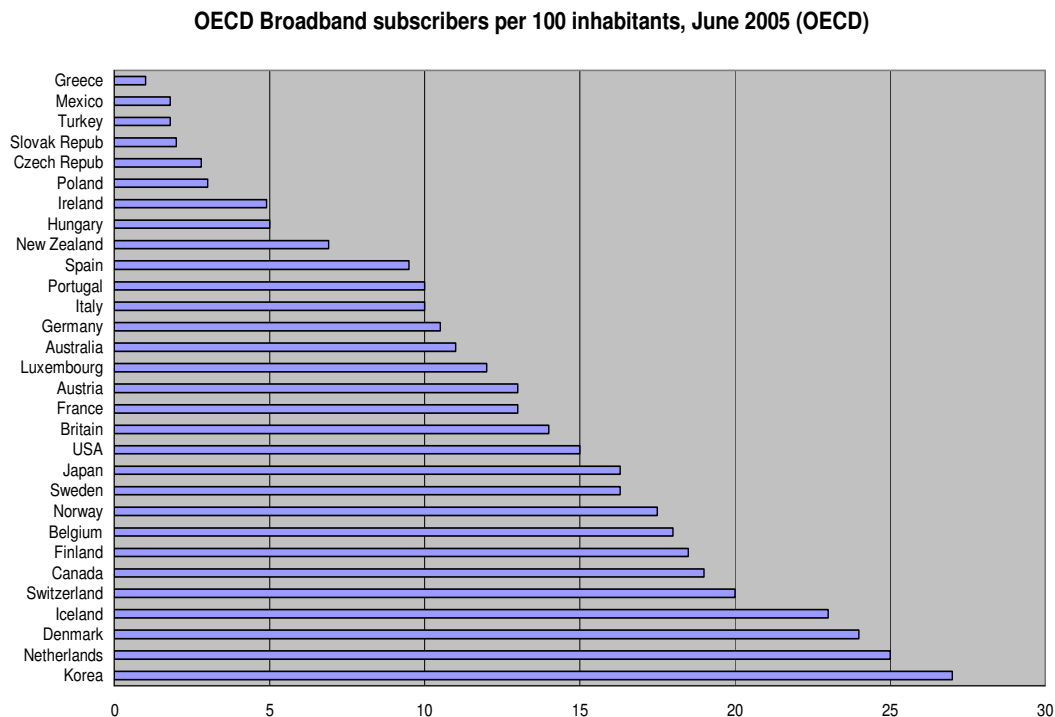
NATIONAL

Internet access is higher in New Zealand's urban centres than rural sectors, and perhaps not surprisingly, higher in households which enjoy high incomes.

More wealthy New Zealanders are more likely to have home internet access[33]

NZ Household Internet Access by total household income: 2001
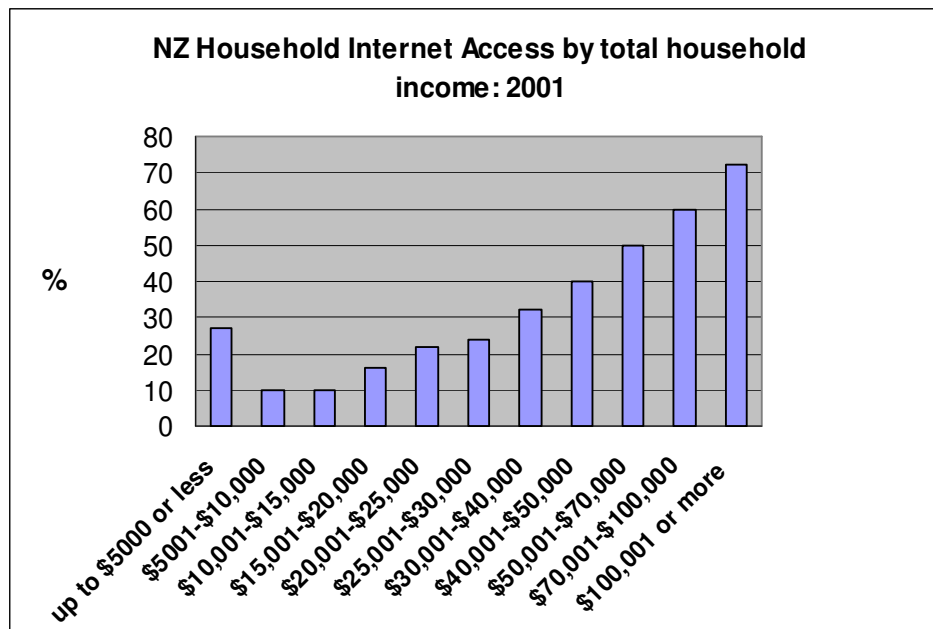
Households with lower incomes are more likely to fall into the bottom end of the 'digital divide' which separates high and low internet 'connectivity' rates in New Zealand. There are several indicators which may be used to predict such rates. A 'Statistics New Zealand' article includes the comment:

'internet use in households…..shows that a digital divide exists in New Zealand. Factors examined include household income highest qualification, household composition, age of youngest occupant, ethnicity, labour force status of occupants, number of children, and geographic location.'[34]

Lack of home internet access does not necessarily imply that pupils from lower-decile schools have poorer levels of 'information literacy'. Says well-known New Zealand educationalist Charmaine Pountney:

' There is enormous potential for the use of information technology in low-decile schools because the children and young people there are already at ease with technology and often find the immediate feedback of good software and visual nature of the media much more congenial and listening to a teacher in a classroom'[35]

[33] Source: Statistics New Zealand, 2001 Census of Population and Dwellings.

[34] Source: from the report The Digital Divide (Statistics New Zealand, 2004, 'Household access to the internet: Key statistics', Article: April 2004. *http://www.stats.govt.nz/products-and-services/Articles/hhold-access-inet.htm*)

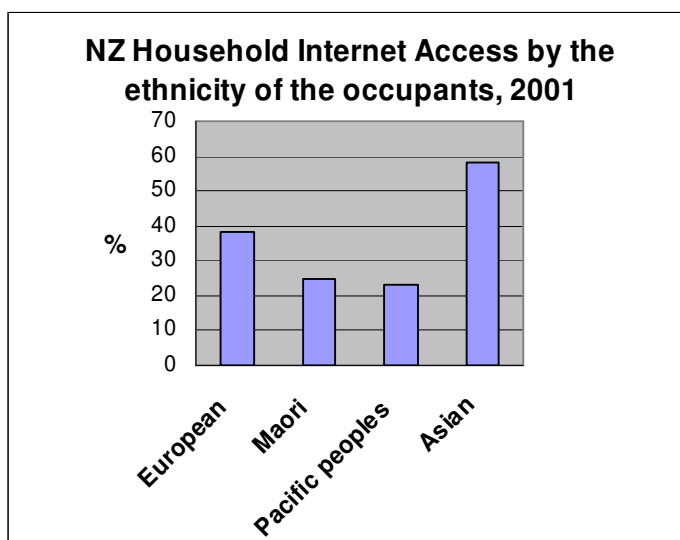[35] Learning our living, Charmaine Pountney, Cape Catley Ltd. Wellington 2000, pg 259.

LOCAL

Home internet access

As a decile 10 school, Lindisfarne College pupils generally come from wealthier home backgrounds which one would expect to enjoy relatively high home internet access, and this notion in confirmed by the facts. 95% of Year 10 pupils at Lindisfarne College in 2005 had internet access from home.(see graph). It should be noted that the results of this project very much depend on the high level of internet access available to pupils, parents and teachers at home. The results of an investigation into the effect of such on-line publication of curriculum support material in a lower decile school with a different socio-economic pattern may be quite different.

%of Year 10 Lindisfarne College Year 10 pupils with home internet access

No internet access: 5

Internet access: 95

%
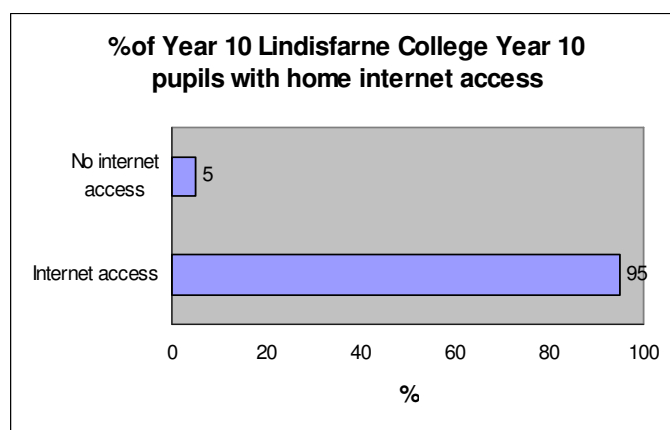
As well as falling into the highest decile ranking based on parental income, the racial proportions of Lindisfarne College pupils are such that one would expect high internet connectivity. As shown in the graph below, internet access in NZ households is highest amongst Asian and European households, and lowest in Maori and Pacific households. Lindisfarne's roll in 2005 was made up of 93% European, 5% Maori, 3%

NZ Household Internet Access by the ethnicity of the occupants, 2001

%

European, Maori, Pacific peoples, Asian

other (mainly Asian) boys, so even though no statistically accurate data had been previously collected about the level of internet use among Lindisfarne parent households, one would predict that it would be high. The ethnic mix of the Year 10 group involved in this project was European 94%, Maori 4%, and Asian 2%.About half of Lindisfarne's 450 students are boarders, but most come from relatively close by and therefore most families have few problems with internet accessibility such as reported by one parent living in a relatively remote area of the upper central North Island of New Zealand…

'We have cancelled our internet subscription in 2005, because we are unable to get the internet due to living in the country. It is very slow, and we kept getting bumped off which has been really frustrating'

Of the 86 replies, only four parents reported that their homes had no internet access. Of the 86 sets of parents involved, 22 (26%) have broadband at home for faster internet access. This compares with the US figure of *'more than one in five households with children having broadband connectivity through digital subscriber line (DSL) or cable modems.'* [36]

A minority of pupils' home internet access was broadband

Internet access from home for Lindisfarne 2005 Year 10 pupils
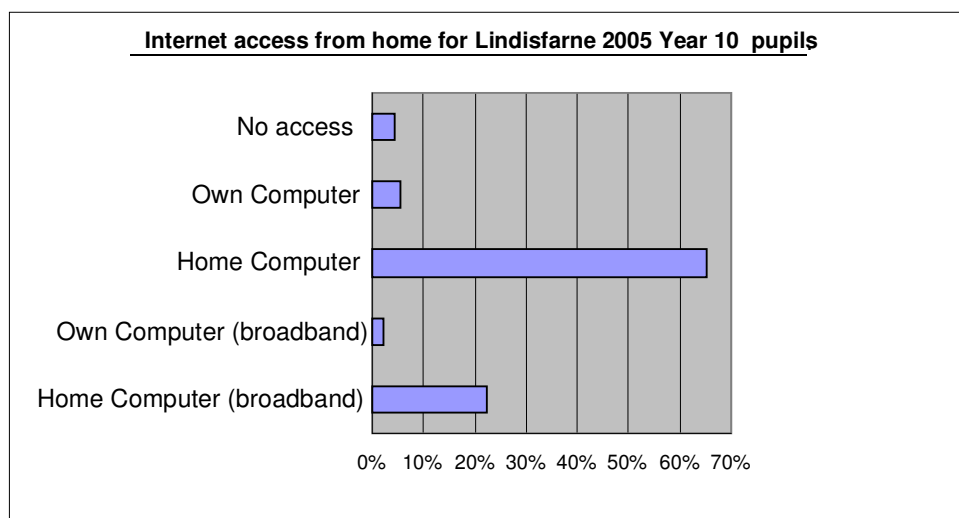
It must be acknowledged, therefore, that the conclusions of this research should be applied mainly to schools of a similar high decile, where parents are generally 'computer-literate', and where most have internet connectivity from home. Wider research into a more diverse range of 48 New Zealand state secondary and composite schools involved in ICT cluster groups in 2004 found that:

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[36] Pew Internet Project data from June 26-July 26 2002 survey. Also, US Department of Commerce, Economics and Statistics Administration, National Telecommunications and Information Administration (February 2002): '*A Nation Online: How Americans Are Expanding their use of the Internet*'. Washington DC, *[http://www.ntia.doc.govt/ntiahome/dn/nationonline_020502.htm]*

'..lack of ICT equipment in the home was a challenge for about half of the school communities and parents. To a lesser extent, lack of ICT knowledge and skills among parents and communities posed difficulties.' [3]

School Internet access

'The greatest barrier to Internet use at school is the quality of access to the Internet'[28] This comment on the USA situation applies also to New Zealand, where Ministry of Education initiatives such as Project PROBE have been put in place to provide high-speed internet access to all secondary schools. Project PROBE is a Government initiative to roll-out high-speed Internet access to all schools and provincial communities:

'giving school children in places like Wairoa the same access to online opportunities available in Wellington or New York.'[37]

Although there are now no secondary schools without broadband access, the number of computers available for student to use with high-speed access is often very limited. There are many reasons why access by New Zealand secondary school pupils in school-time to the Internet is limited, including lack of funding and security issues. Lindisfarne College dayboys and boarders have access to broadband internet connection via a bank of 25 computers in the College library, which is available from nine o'clock each morning until nine o'clock each night for five weekdays. Boarders make good use of the library computers after school before dinner, often to email their parents. Teachers can also book the 30 computers in the computer laboratory, each with broadband internet access. Block bookings were made for each of the Year 10 classes for this research at various times in Terms two, three and four by English teaching staff.
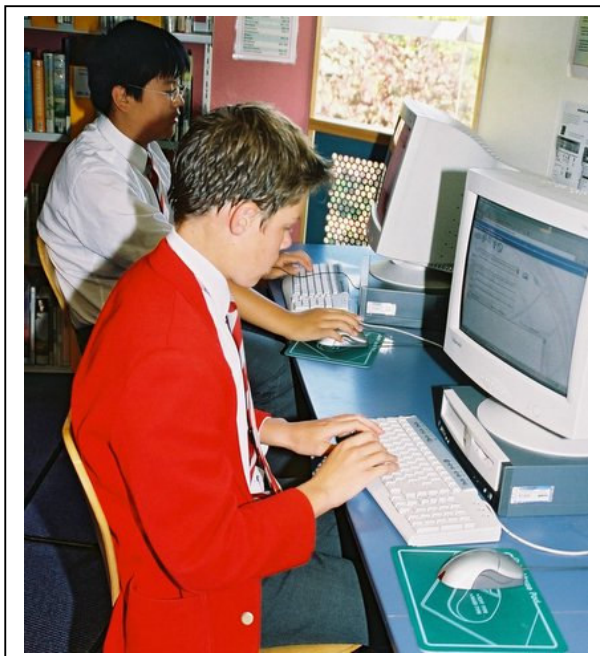
Lindisfarne pupils are fortunate to have high-speed internet access for 12 hours a day, either supervised in the 'PC Laboratory' (above), or in the College library which is open in the evening for boarders to use (left).

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[37] Project PROBE Information Sheet, 2002. http://www

E-LEARNING OPPORTUNITIES IN OTHER COUNTRIES

My attendance at the Oceania section of the "2nd International Innovative Teachers' Conference" from November 8-11th in Seoul, South Korea, made possible by the generousity of Microsoft (NZ), and the MOE, offered me many opportunities to view and discuss the development of e-learning in our Pacific region. Obviously, delegates from the many developing nations represented at the conference reported that their development of e-learning was severely hampered by lack of resources and political instability. Officials from KERIS (Korea Education and Research Information Service) and Korean teachers were united in their desire to further develop the infrastructure to support e-learning both in the education and industrial area. Secondary schools have separate 'E-learning' Departments, and 300 so-called 'cyber-teachers' have been taken out of their classrooms to offer on-line support, revision, and especially exam preparation for Korean students, both in school and out-of-school hours. The prevailing mentality in many of the Asian nations is that e-learning is ideal for their preferred secondary education rote-learning teaching style. High school students spend much of their revision time on-line accessing worksheets and 'swot' guides to help them 'cram' for all-important external examinations. Ministry of Education officials believe that 'e-learning' is synonymous with 'innovation', and as one official said 'North Korea has many more 'physical resources' than we do here in the South, so we have to capitalize on our 'human resources'. E-learning is considered so important that purpose-built satellite dishes are given to remote rural Korean schools to connect them to the 'global village' and to the national KERIS network. Australian and the USA are two countries which are also quickly developing e-learning networks on a local, regional and national basis.

E-LEARNING OPPORTUNITIES PROVIDED BY OTHER NZ INSITUTIONS

There are several on-line sites available for parents and pupils to use to access details of New Zealand secondary school course content and assessments. The biggest national site, called 'edCentre',was set-up at a cost of $720,00 and promoted as *'the first comprehensive gateway that has been developed in the education sector'*. At the launch of the site in May 2005, Associate Minister of Education praised it as *'a powerful tool'*. Unfortunately, any pupil or parent trying to find up-to-date details of the current curriculum or assessments for a particular school will find 'edCentre' of little use since it does not generate any information itself, but is merely a gateway, with 'signposts' to other sites such as 'tki', which can be accessed independently anyway.

There are several examples of regional on-line support groups being set-up by schools around New Zealand such as 'Otago.net,' 'Far.net,' and 'Coro.net,' but as this project is concerned with the effectiveness of an individual school ICT initiative, it is worth briefly looking at what some New Zealand institutions offer their clientele in terms of on-line support.

Auckland Boys' Grammar school offers one of the country's most comprehensive on-line curriculum support sites (www.grammar.net.nz). This site allows pupils out-of-school access to a full subject and levels range. (see below).

The Auckland Grammar School's Intranet is one of the most comprehensive.
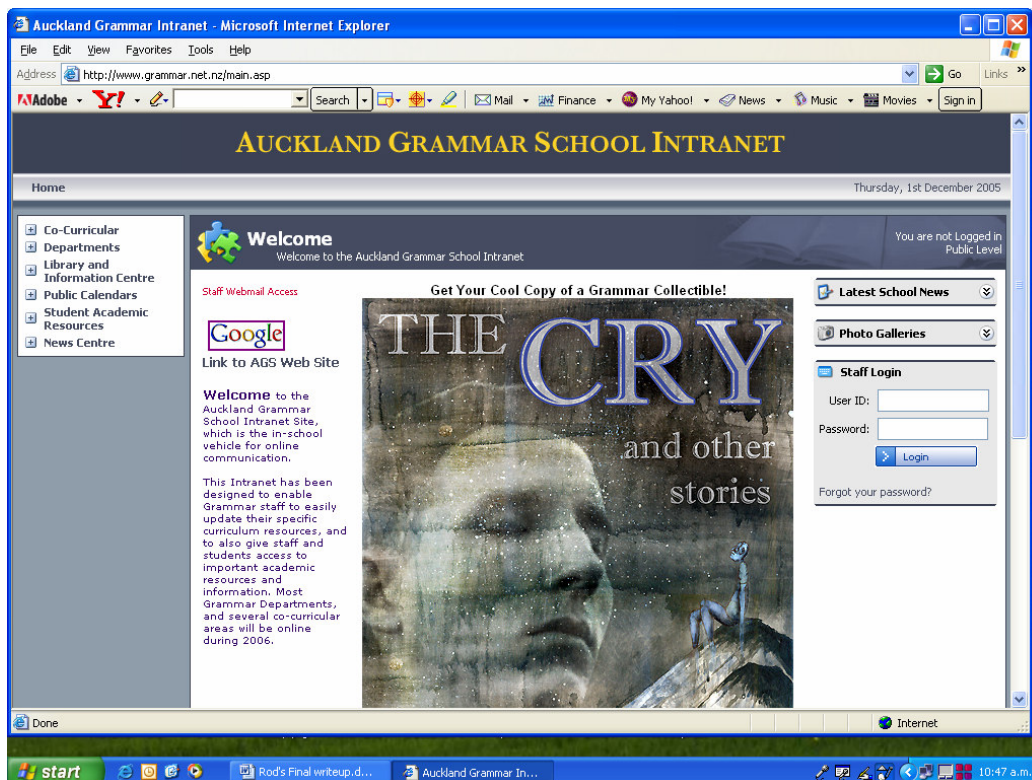
Year assessment plans are provided on-line for all subjects and year groups on the Auckland Grammar School Intranet site.
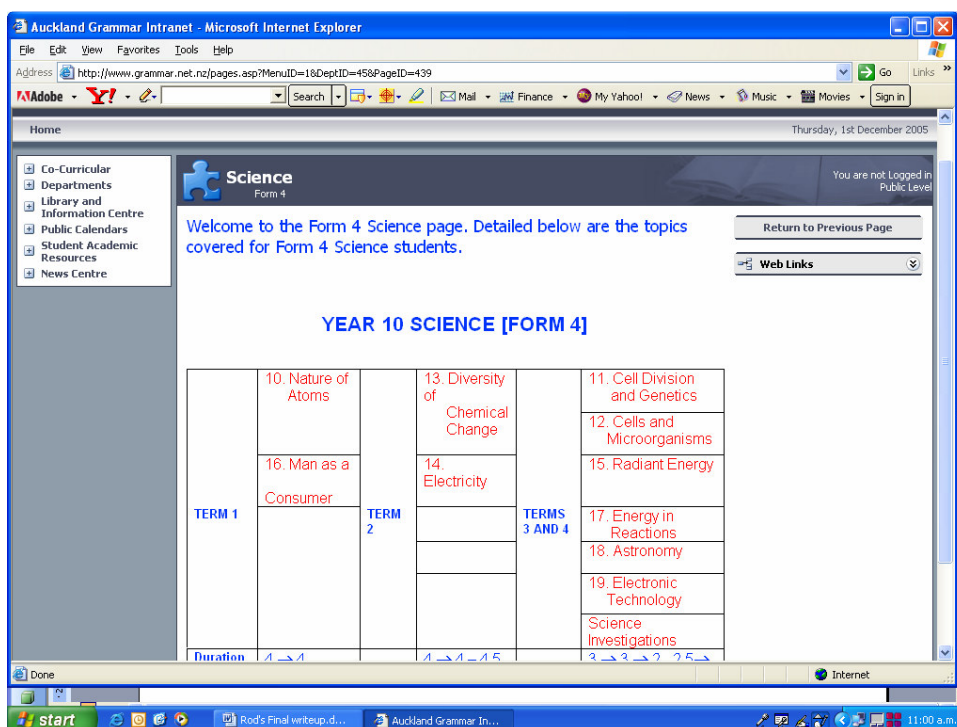
By clicking on each subject, students can find interactive revision quizzes, previous NZQA and internal exam papers and mark guides. (see sample for Level 1 mathematics above).

Boys, parents and staff at Auckland Grammar can access a comprehensive range of curriculum support material including staff names, student work samples and term and year plans (see sample above).

Other secondary schools have made use of their intranets in a variety of ways. Taradale High School, for example, has a 'Creative Writing' blog-site, where senior pupils are encouraged to contribute to and appraise each other's original prose and poetry. Class lessons often 'spill over' to the evening when teacher/pupil discussions continue on-line. (see below)

Sample teacher-pupil comments from an after-school Taradale High 'blog' site.

Post a Comment On: The Blogs

"A Choice"

5 Comments -   Show Original Post   Collapse comments

Hathor said...
'Continual damage and actions,
An identical unwritten script.'

"..I like this part a lot. I think you have some great imagery here, but I also think that the rhyming has restricted you somewhat."

Mr C said… Well done for taking the first step. Very brave. If I think about what Mrs Schofield said about having a sense of you in your work then I don't know where that is. "I'm not talking about using I and being all mushy, I'm talkingabout using your own voice and describing things in a way only you can because of who you are. That was very deep and I may need to have a little lie down. I agree with Hathor about the two lines and the rhyme. Good work."

The problem of lack of time to maximize the potential of on-line support systems noted later in this research project, is acknowledged by teachers from other New Zealand secondary schools:

'Coming from a school where you had to have every course on-line it meant you had to do a lot more work. My previous school had a potentially very useful system involving on-line tests which students could complete from home or school between seven and nine each night, and it would mark itself and store the marks in a work-book but it took a hell of a long time to setup and generally speaking very few students or teachers used it'.

'The Kings College on-line site was complex, and therefore enormously difficult to keep up-dated. On-going maintenance and up-dating was really difficult, and once the students realised it was losing its freshness their interest dropped away.'

Unlike secondary schools, most tertiary institutions in New Zealand use the internet for educational purposes such as posting lecture notes, arranging chat-groups, suggesting web-links for student research, and so on. In the sample below, a lecturer (see comments in italics) from the Hawke's Bay outpost of the Palmerston North in College of Education uses web-teaching to discuss a research proposal with an Integrated Arts and Language Paper student, after lecture hours:

Sample tertiary institution on-line blog discussion between teacher-pupil.

Subject: Re: Research proposal http://webct-ce.massey.ac.nz/SCRIPT/206205_0502_PNTH_E/scripts/student/ - MessageContent
Message no. 19 [Reply of: no. 4]
Recipient: Jo Winter
Date: Tuesday, August 30, 2005 11:37am

In message 4 on Monday, August 29, 2005 7:55am, Jo Winter writes:
Focus of research: Oral traditions and Story-telling - The Whanganui River
Hello Jo, Good choice of focus. I presume it has local significance to you.
Model of Inquiry: A Learning Journey
Research questions: Where did this legend *Is it a legend or a myth? There is a difference.* come from and what is its history?
Following the path of the Whanganui River, is this possible? *This is a yes/no closed question - it needs re-wording. I presume you mean does the story accurately relate to the path of the river.*
What landmarks or features can you see on the river that supports this legend?
Again this could just lead to a list of features. It could be combined with question 2. I think you could widen your focus by looking at other landmarks that have stories attached to them. Also I need some idea of how you are going to integrate your focus with language and dance or drama.
Potential sources for your Annotated research record.
Massey Library books on legends, Local libraries books on legends *This would be where I would start I think*, videos if any, >local Maori tribes, Kaumatua in the area. Yes >Hope that this okay. > >Jo *Send me the extra detail please, Lyn. It's an interesting topic which chn would enjoy delving into I'm sure.*

Regards, Judy

PREVIOUS USAGE OF THE LINDISFARNE WEBSITE

The Lindisfarne College website has been used since its inception in 2001 primarily as a medium to communicate with parents and Old boys, and to publicise and 'sell' the school. There is a section on the site which allows parents to access Rector's newsletters, and the 'Old Boys' section and 'Highways' magazine (published quarterly on-line) proved useful in allowing ex-pupils living overseas to be informed about reunions and on-going school developments. The College website has proven

popular with parents and pupils who have accessed the pictorials (digital photographs and video-clips) to see pupil activities in and around the school. The number of 'hits' has increased annually since the website was established, and averaged more than 4000 'hits' per day in 2005. The pupils themselves are the biggest users of the school website. Most parents of Year 10 boys reported that most seldom if ever accessed the school website in 2004.

A minority of Year 10 Lindisfarne parents access the main College website

How often Yr 10 Parents accessed the Lindisfarne College website in 2004
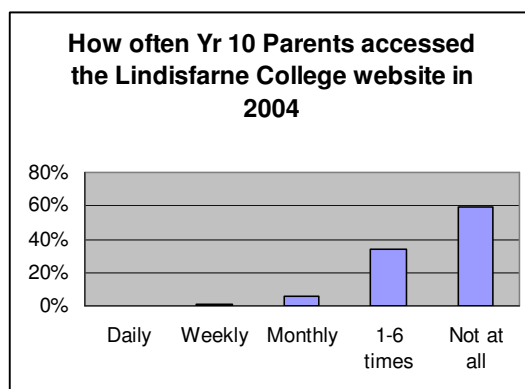
The main use the parents made of the school website was to *'view photographs and videos of boys' activities'*, or to *'read about current school activities'*. Only 2 out of 86 sets of parents surveyed said that one of the main uses they made of the school website was *to 'read about curriculum-related matters (eg 'Academic Directory').*

Lindisfarne Year 10 parents made little use of academic information offered on the main College website.

Main College website pages accessed by Year 10 parents in 2004
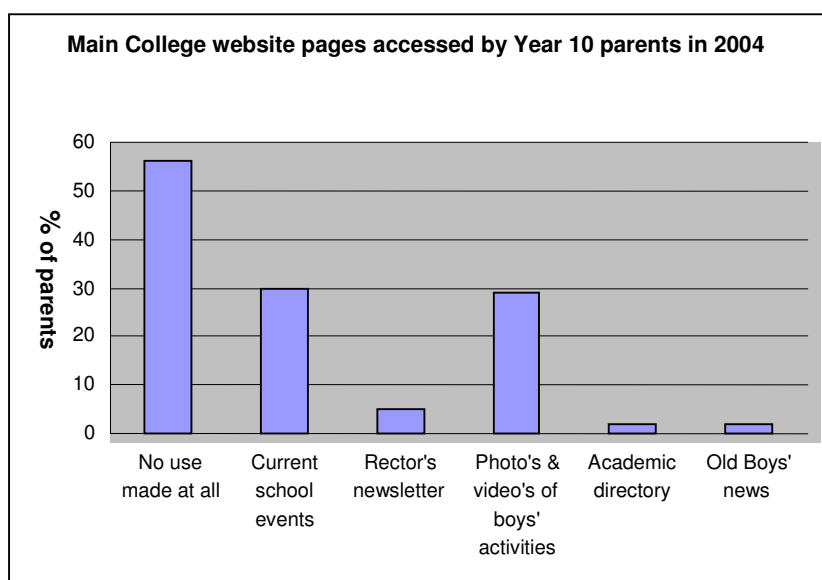
Interestingly, however, a good majority of parents said they would access curriculum-related material if it was offered on the website (see below). This seems a clear

indication that parents would indeed make use of 'curriculum-support material published on-line'.

Using the Interact site has changed parents' views on their possible future use of the school website.

In future, Year 10 Lindisfarne parents would use the website to access these pages (if made available).
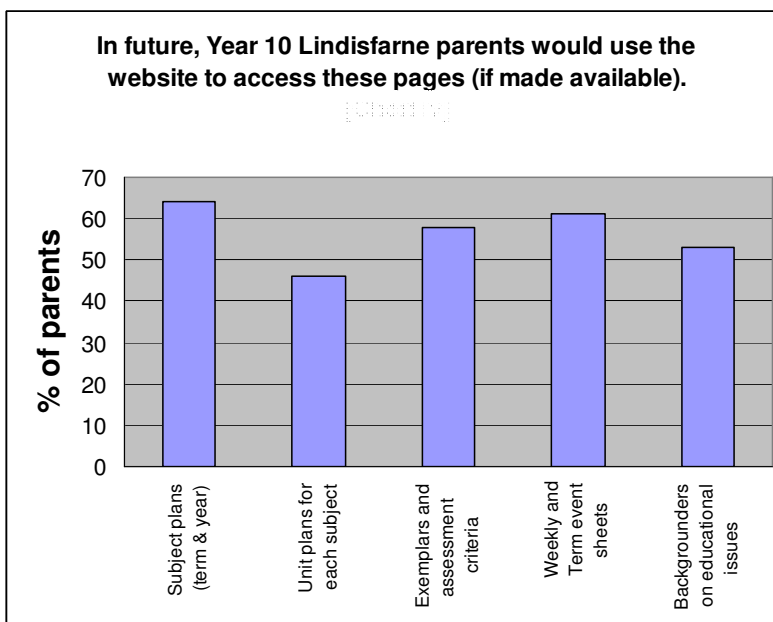
From the interviews held with parents, it is clear that they would prefer to be involved in the overall planning of their son's projects from the start, then let the boys themselves do the actual work:

'We would like to know enough about what the unit involved to be able to discuss his plans open-endedly and offer alternatives'
'I was happy to take him to the library, help him with the various steps to take, and get him started'

This hypothesis was proven correct in that parents reported in the follow-up survey that they had in fact made us of the support material. Moreover, they believed such on-line support material had helped them engage more with their sons' research project.

One clear comparison was able to be made by looking at the amount of parental involvement offered to their sons'for their 2004 English research project in the previous year, and compare that with that offered in 2005.The parents were asked *to 'Describe the amount of (your) parental involvement (from either or both parents) in your son's 2004 Research project.'*

Almost 70% of parents said they were involved in their son's 2004 Research project.

Year 10 Lindisfarne parents describe their involvement in their son's 2004 Year 9 English research project.
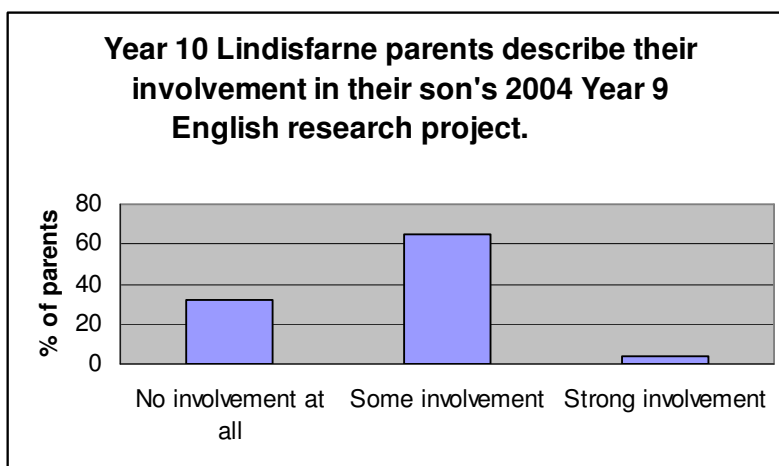
In total, 65.9% of parents stated that they had *'some involvement* '; 3.5% said they had *'strong involvement'* , and 30.6% said they had *'no involvement at all'* in their son's Year 9 English project, for which no on-line support had been offered to pupils or parents.

To compare the perceptions of pupils with their parents' perceptions on how much assistance they had been offered for their Year 9 project, the boys were asked the same question, and a similar pattern emerged.

The boys said that more than 65% of their parents were involved in their Year 9 project.

Lindisfarne Year 10 pupils describe their parents' involvement in their 2004 Year 9 English Research projects.
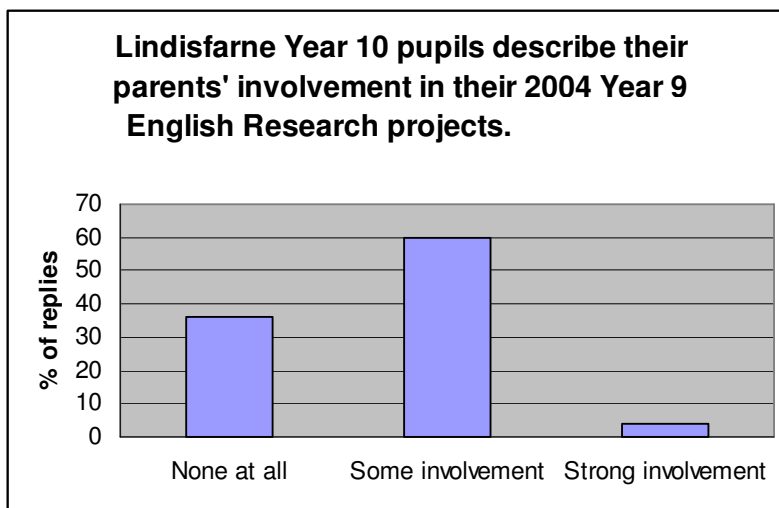
When parents were asked to expand on their involvement with their son's Year 9 project, several said the reason they had not been involved was because they were not even aware that their son was doing the project:

'I didn't even know he was doing it'
'Our son keeps class-room related things very much to himself so we did not have a clear understanding of what was involved in his year 9 English project'

The nature of parental involvement was very wide-ranging, with parents most often assisting their sons in logistical terms:
'Transport to our local library'
'Husband drove son to Maori elder's house and sat while the interview took place'
 'Transport to Museum/Pa sites'

The second-most popular form of parental involvement reported was assisting with the mechanics of presentation:

'Edited grammar' / 'Proof-reading'
'Final editing-showed finer points of 'Word'

It was clear from the interviews that parents were often not aware of the exact details required for their son's projects, and that their understanding of the appropriate length, depth and assessment criteria of the projects was very limited.

'Our boy wasn't really sure what exactly he had to do'
'We asked xxxx to go back to his English teacher and bring home clear details of the requirements of the project'
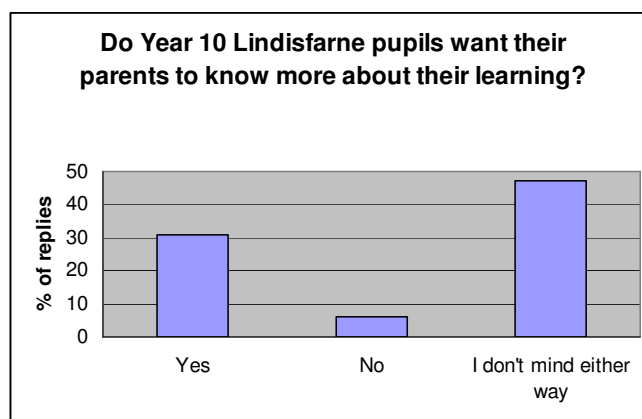
It was clear that some parents believed there was a disparity in the instructions and assessments between the four teachers involved in the same project:

'Some of the boys presented their 'Te Maoritanga O Heretaunga' projects bound in woven flax, with mini-pois, etc and got high grades, yet we were never aware that the boys could use their imaginations so widely like that'
'There seemed, frankly, to be some difference in the way the boys' projects were assessed from teacher to teacher'

Whilst the overwhelming majority of parents clearly wanted to be more engaged in their son's work, three made the point that they believed it was not appropriate for them to *'do the lad's work for him'*, or *'We think our son should complete his work on his own'*.

Some of the most interesting responses in the initial 'pre-intervention' set of questions and interviews came in the boys' responses to the question of whether they *'wanted their parents to understand and know more about what [you] are learning at Lindisfarne'*.

A clear majority of pupils were not concerned about the prospect of more involvement from their parents from use of the Interact site.

Do Year 10 Lindisfarne pupils want their parents to know more about their learning?

(bar chart: y-axis "% of replies" scaled 0 to 50; Yes ≈ 31, No ≈ 6, I don't mind either way ≈ 47)

Reasons given by boys who ticked the '<u>Yes</u>' box were mainly along the lines that parents who were more au fait with the details of the boys' learning would be more able to help them:

'Because if mum knew about my work she'd be able to help me more'
'They can help us better'
'They can motivate me to complete things.'

Boys who felt they needed more help than was provided at school believed that their parents could help make up for this if they knew more about the work involved:

'They could help me because I struggle a bit at school work'
'I'd like them to help me understand parts of prep I don't understand.'
'We don't get enough help sometimes-if our parents knew we'd get more help'

The pupils who ticked the '<u>No</u>' box did so because they were proudly independent in their work habits:

'I'm independent and can manage without parental influence'
'My mum goes to university- I don't need help and don't want to bother her'
'Should be response (sic) for my own actions-wouldn't be 'my work''

Others had negative thoughts about the prospects of parents knowing more about what they were supposed to be doing:

'Cause they always criticll'(sic)
'They'll nag me'
'Can become a pain in the neck'

The pupils who ticked the <u>'I don't mind either way'</u> box said:

'It could be good but it could also be annoying in the long run'
'They could help but they also might pressure me'

The pupils were also asked open-ended questions on *' why / how on-line publication of curriculum support material would help pupils/ parents/ teachers improve pupil*

learning?' and the responses were invariably very positive about the potential improvement in engagement that would be possible with such a strategy in place:

Pupils' ideas of how on-line support material could help <u>pupil</u> engagement

Many of the boys said that the Interact site would help them because if they misplaced or lost notes they were permanently accessible from home or from school on-line:

'If you forgot details of the work and when things were due in or how the teachers would mark your work you could just click on and check, from school or home'
'Pupils can't lose paper as it would always be on the net'
'Pupils can access assessment criteria any time'

Another commented that other schools make more widespread use of computers to:

'Save photocopying-my friend at (name of) College gets al his prep off the Internet'.

Other pupils remarked that Interact would be valuable if they were away because of sickness or extra-curricula commitments:

'We could use it to catch up on missed work if we'd been away sick or on a sports trip'

Another common response was that time-lines and assessment dates would be always available to be checked on, which would assist them to keep on time:

'We'd know what things were – no surprises'
'Know where we're ahead or behind'
'Work out when tests and exams are- be ready'

Several boys thought that co-operation among their peers would be enhanced:

'You could look at other people's work to get ideas'

Ironically many of the same pupils acknowledged that, at the same time, competition would be keener , with each Year 10 boy being able to compare his progress with 85 other boys'.

'I could see how much work (x) had done so I could always keep ahead of him'.

There were very few if any negative feelings about whether on-line curriculum support material would help or hinder pupil engagement, apart from the odd instance e.g.where a pupil commented:

'It would be no real use- you know what your classwork is anyway, and you know from the school diary and so on when tests and exams are.'

Pupils' ideas of how on-line support material could help <u>teacher</u> engagement

Apart from the occasional negative comment along similar lines:(*'No use- teachers already know what goes on'*), the vast majority of boys believe strongly that there would be benefits for teachers in establishing an on-line learning management system. Most boys could see that their teachers could easily track the progress of their students via Interact.

'They could easily watch your progress'
'They could quickly view samples of our work and not tediously go through books'

The boys believed this access would lead to their teachers being quickly able to help individual students:

'If they see we are struggling they can help quickly'
'Can find areas we're good at and those we're weaker at and help us'

The students agreed with their parents that the on-line publication of agreed assessment standards, time-lines and instruction sheets would help reduce inconsistency among teachers:

'There would be no excuses for mis-information and the differences in the ways of teaching and assessing the same unit by different teachers'

The comment *'ease of access'* to student work ran like a motif through the boys' answers, and their extended interviews showed that they all believe internet-based communication connecting pupils/parents/ teachers is much faster and more reliable than traditional methods such as telephone, letter, arranging one-to-one interviews, etc.

Pupils' ideas of how on-line support material could help <u>parent</u> engagement.

Again, pupils were overwhelmingly positive in their perceptions of the possible benefits to their own learning that would flow from better parental engagement due to the introduction of a learning management system. Most said they would prefer their parents to learn about what they were studying via the internet, rather than coming in to interview teachers personally:

'They could find out what I had to do and how I was going quietly from our home computer and they wouldn't need to embarrass me by making an appointment with my teachers and making a big deal of coming to school themselves or dragging me along to the teacher interviews'

Other boys saw that parents of boarders, and especially parents who lived in more distant places such as the Chatham Islands or Korea would value the chance to find out more about what was happening so far away in their son's classrooms:

'Especially good for boarders' parents to see how we're going'

'The biggest advantage would be that parents could find out stuff <u>when they wanted,</u> from home, rather than having to come in to a school which they may not want to so if it was just a small thing they wanted to find out about my classwork'
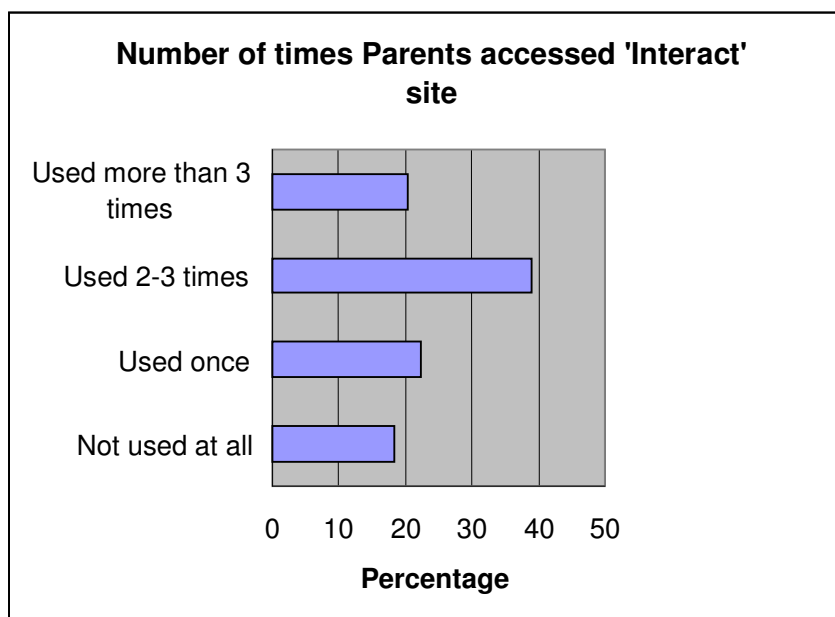*'So they could see what we get up to in class even if they live on a farm near Gisborne'*

Boys also spoke of the way that parents could find out how their son was doing compared to all other boys in that entire Year group.

RESULTS

(i) Parents

The parents of Year 10 pupils do seem to have used Interact to help them understand more about their sons' Research Project. (see chart below) 81.5% of Year 10 parents accessed the site at least once.

Over 80% of Lindisfarne parents of Year 10 pupils used Interact over the duration of this research project

Number of times Parents accessed 'Interact' site

Category	Percentage
Used more than 3 times	20
Used 2-3 times	39
Used once	22
Not used at all	18

Only 18.5% made no use of the site at all, with several of these parent couples stating that the reason was that they had no computer at their homes. Other comments included:

'Unfortunately we didn't access this site-Neither (my husband) nor I spend any time on our home computer-it's just not a part of our lives.'

It was interesting to note the comment that while parents could see the benefit of the internet for their son's learning, they made no use of computers at home themselves:

'We have no computer at home-we use my husband's work PC if we ever need one. Our son learned a good deal about those early days from library and Internet sources I want to add that the project was a very worthwhile experience for our son-he now sees his grand parents in a whole new light.'

Other parents felt that the project had motivated them into becoming more 'computer-literate':
'We are ground under with all sorts of commitments so much to our embarrassment we didn't read anything from Interact. This is not a good thing but it's the way it is with us now! We need to change!'
'We wanted to help more but our computer is very slow- we got in once only..I am going to a computer course next!!'

The lack of broadband connectivity previously noted was a clear factor in causing frustration when parents tried to access some parts of the Interact site. The exemplar of the previous year's 1st-placed Research project, containing photographs, maps and colourful borders was 'graphic-heavy' and therefore caused the worst access problems for parents limited to dial-up access:

'We just don't have fast enough access. We don't use the Internet often. It's very frustrating but we don't want to use Airnet due to monthly cost.'
'Being able to log on and see progress which was being made and read the questions other pupils had was very useful. Couldn't download the work exemplar-no broadband.'

Some parents did not get involved in the project because they clearly want to encourage their son's independent work habits:

'Our son is very independent with his homework and does not require much of our assistance.'
"(son's name)) didn't really want or require much input from us-it was just interesting to look at it-it had some very good info on it, especially the bibliography guide and sampler. Well done."

Other parents said that they always try to involve themselves in their son's learning, and the Interact site didn't increase that involvement:

'We would ask questions and encourage anyway.'

The comment was also made that parents had confidence in the Lindisfarne staff and felt it wasn't the parent's role to be actively involved in their son's learning:

'I know Lindisfarne's systems are good and so I don't have to worry about my son's progress.'

The most pertinent question asked of the Year 10 parents was whether provision of on-line curriculum support affected their involvement with their sons' learning. They were asked whether their engagement changed in 2005, compared to their involvement in their son's 2004 Year 9 Research project, on 'Te Maoritanga O Heretaunga' ('Maori History and Culture of Hawke's Bay'), when no on-line support was offered. The chart below shows that 55.6% of parents stated that their involvement increased, thanks to the interact site.

When asked to explain exactly how their involvement in their sons' projects increased, most parents stated that they appreciated being able to quickly access the details of the content, timing and assessment criteria of the unit:

'The site helped me understand the expectations of the project and encourage (my son) to be more detailed!'
'I was able to clearly understand the brief of the given assignment and access the clear guidelines/expectations and ATTEMPT (!!) to work alongside my son to point him in the right direction and encourage him.'

Over half the parents stated that their engagement in their sons' learning process increased because of the Interact site.
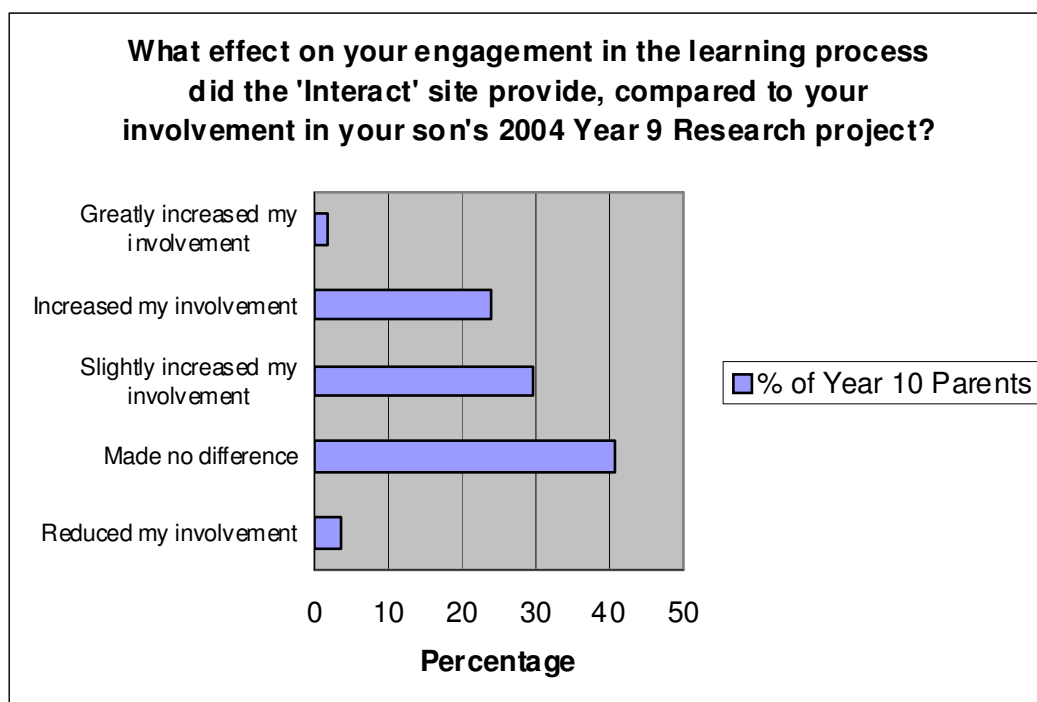
The boys' perceptions of their parents' involvement supported their parents' views. 50% of the boys stated that they thought their parents' involvement in their work increased with the new system. (see chart)

Pupils agreed with their parents that parental engagement improved with Interact

How did Interact affect parental involvement in your project?

Reduced	
Made no difference	
Slightly increased	
Increased	
Greatly increased	

0   10   20   30   40   50
%
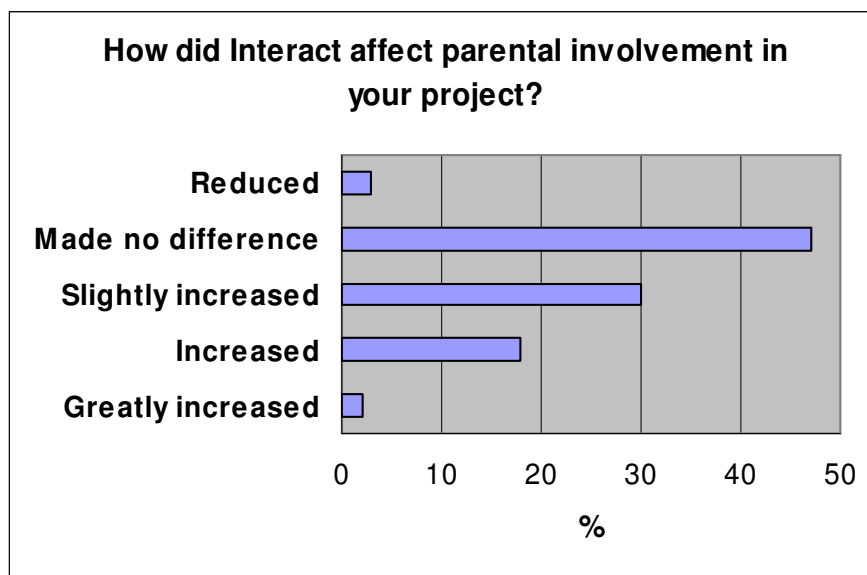
A range of reasons were given by parents why this increase in their engagement had occurred. The main reason given was that access to specific details of the teaching unit on Interact gave empowered the parents to give their sons more specific help:

Parents agreed the details offered on Interact were useful to access from home

 'Because of interact site I could see where my son was at and help him when needed.'
'It gave us a better idea of the amount of work expected in this assignment.'

Many parents commented on the fact that their sons are notorious for keeping details about their school work close to their chests and are usually very reluctant to discuss their school-work:

'I think this is a great tool. Boys tend to 'forget' (or not mention) some important details and by me being able to get information online I could guide him into achieving at a higher level, give him encouragement and know I'm on the right track.'
'It increased our awareness of the project and let us encourage our son in his efforts.'
'Content and assessment guidelines were helpful so we knew what was expected of our son and could encourage him to achieve this.'

The chance to see the calendar and milestone sequence of the project gave parents a picture of the time-line of their sons' projects:
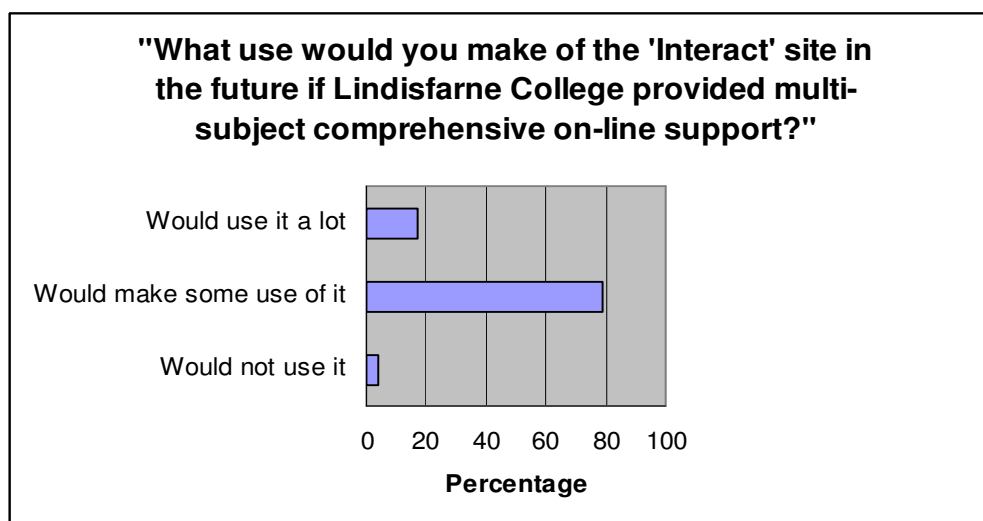
'We could see for ourselves what work was needed to be done to achieve the completion of the research project.'
'It helped me to see where my son was on his project and how I could help him with getting his resources when needed to get things finished on time.'
'When we logged on we saw how little our boy had done compared to some other boys so put pressure on him.'
'Using the site to see that other boys had started prompted us to stir our son along and get him going.'

Several parents said that they enjoyed being able to read all the teacher's comments made in response to pupil questions on the 'helpdesk'.

'I could see how my son could communicate with his teacher and that's how my involvement was increased.'.

This range of quotes offers clear evidence that parents will make use of such curriculum-linked support material if it is offered, for a variety of reasons. When asked if they would make use of a more comprehensive interact site offering on-line curriculum support for a wide range of subjects and levels (such as the Auckland Grammar School model referred to earlier), a big majority of parents said that they would. (see chart below).

A clear majority of parents say they would use a more comprehensive on-line site.

"What use would you make of the 'Interact' site in the future if Lindisfarne College provided multi-subject comprehensive on-line support?"

Would use it a lot
Would make some use of it
Would not use it

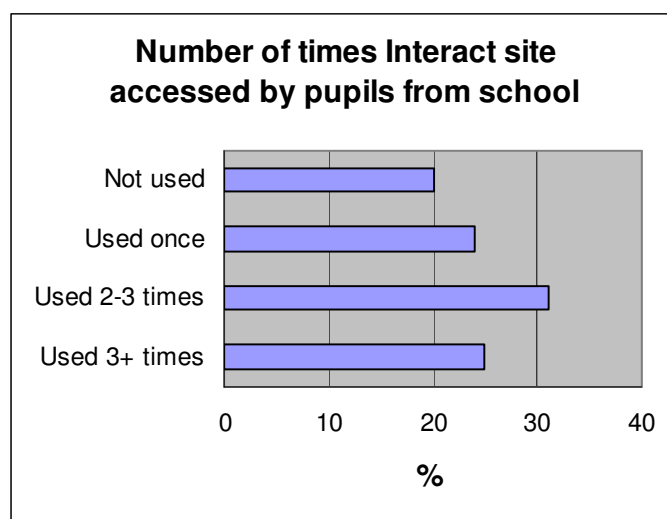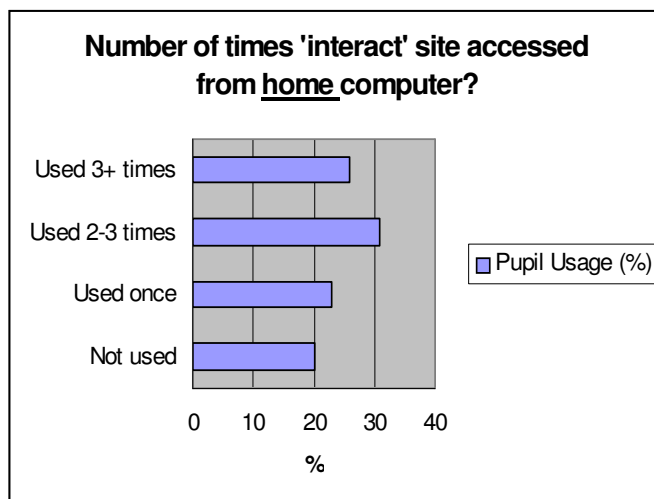0 20 40 60 80 100
Percentage

(ii) Pupils

The Year 10 pupils made good use of the new Interact learning support system, with 69% accessing the site three or more times from a school computer. (see chart below)

Pupils at Lindisfarne were able to access Interact from school. Boarders and dayboys have broadband internet access via the College library at lunchtimes, after school and during prep. They can also be taken to the PC lab for a normal timetabled class, and many were, especially in Term 4 when the Research projects were due.

A clear majority of pupils accessed Interact several times from school and home computers.

Number of times 'interact' site accessed from **home** computer?

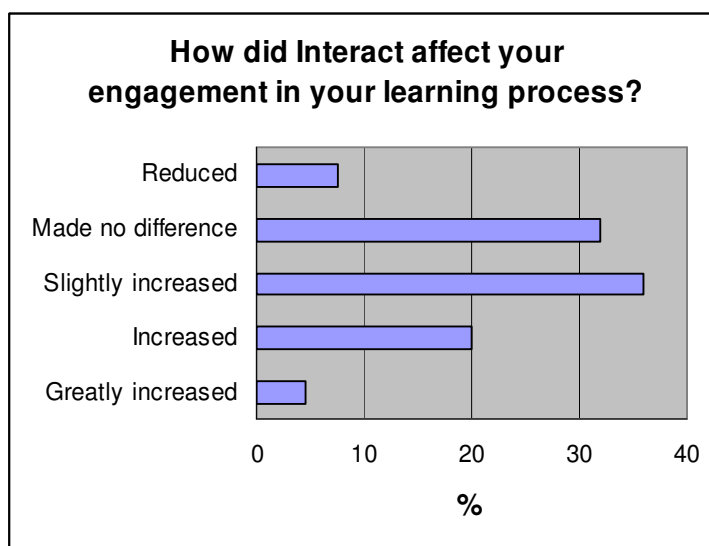Number of times Interact site accessed by pupils from school

Pupils made less use of Interact from home, where they had no specifically allocated time or compulsion from their teachers. Nevertheless, 80% of pupils made use of the site voluntarily, from home, compared to the 98% who accessed the site from school.

This figure is evidence that if pupils are offered on-line support by their teachers, most have the will and the hardware to make use of this facility from their own homes in their own time.

The most important question which this research sought to answer is to what extent engagement in the learning process was improved by the provision of on-line support material? The students were asked to comment on whether their own perceived level of 'engagement' (defined in their questionnaires as 'involvement / interest / work') was affected by the support offered on Interact and the majority stated that it had. (see chart below).

60% of Year 10 pupils said that they believed their own engagement had increased by their use of Interact.

How did Interact affect your engagement in your learning process?

Category	%
Reduced	8
Made no difference	32
Slightly increased	36
Increased	20
Greatly increased	4

Reasons offered by the pupils were based on 4 main areas:

1) The ease of access to supplementary data:-

Boys commented that the Interact site was easy to access from school or from home, and they found the elements on offer there assisted them in their work:

'Gave guidelines which were easy to understand'
'Easy to log-on and check assessment details and other stuff'
'I could quickly find out how to set out my bibliography, do an interview and other resources'

Allied with this comment was the positive feedback about the ease of input into the Interact site:

'To log and see what I had done when.
'Interact allows a log to be written easily. It only takes a few seconds and whenever you come back to it you can quickly and neatly update things.'

2) The motivation provided by having to input regular milestone reports:-

 Having to complete regular 'milestones' was perceived by many boys as a means to avoid procrastination, as they were reminded what was due at various stages during the three terms:

 'Interact helped me do things 'in blocks'
'I could see when milestones were due so I didn't leave it all to the end'
' The Interact log reminded me- like a jump start'

3). The ability to monitor progress against their peers from all Year 10 classes:-

Many boys enjoyed the chance to see how the rest of their Year group was coping with the same work. They said that usually a class and its teacher keep to themselves, behind closed doors and they don't normally have a chance to observe the work of boys outside their own class. This was important since it allowed boys from different ability 'streams' to observe at first hand the standard and speed of work produced by boys of different abilities from their own. In this sense, Interact had added an element of transparency which encouraged equity of effort and assessment, and allowed a more holistic approach from teachers:

The site letst you see where you are at in relation to boys from other classes.'
'It was good- you could compare yourself with others'
 'Good to be able to see how far your mates have gone'
'You could have look at all Yr 10 efforts and we don't usually see other classes' work'

4). The added security of not having to rely on loose sheets of refill:-

'I could find requirements if I lost them'
 'You didn't lose work'
'Useful record data that you could access from school or home'
 'Keep track of what we'd done'

Only a very few pupils made use of the 'on-line chat' or 'help-desk' to communicate with teachers or their peers, but the few who did seemed to find it useful:

'Good to 'talk' to other people about progress'
'Good to be able to ask questions on-line'

Of the 40% of pupils who said they did not believe that the Interact site increased their personal engagement many clearly felt it was 'just another thing to do', and often had opposing points of view from the positive comments above on the same aspects of the system:

'The log was annoying- I had to update it all the time'
'It was a pain having to log on-useless'
'I only used it when I was made to'
'I was sometime hard to access'

'It complicates things, to a large degree'
'More of a drawback than a help'
'I didn't use it at all from home. I'd rather have things on paper than a computer'
'We should do it without needing a log and so on'

The pupils who believe that the Interact site increased their parents' engagement in the learning process offered a similar range of reasons as their parents:

'It made them aware of what we were doing at school'
'It helped as they could see where I was compared to my friends'
'They looked at the 'Winning 2004 project' exemplar and this helped them understand the level involved. They would never have the chance to see that kind of thing at parent interviews.'

A similar proportion of boys said that they believed their parents' support and interest didn't change with Interact, several of whom said they could simply ask about their sons' work:

'They could ask me- they didn't need a computer'
'My mum knew what I was doing without looking at the site'

Other boys felt they were mature and independent enough not to need or value parental interest in their class projects:

'I'm thoroughly capable without them'

Still others said access to Interact was too difficult:

'They found it too hard to get in'
'They don't have high-speed so they gave up waiting'

In terms of whether the pupils believed that the Interact site affected their teachers level of engagement, most commented that they thought it was an easy way for their teachers to 'keep tabs' on their progress, simply by scrolling down the 'My log' entries.

'The site allowed my teacher to monitor our progress with his own laptop or PC from school or from his home'
'They can see how we're going and how they can help you'
'This year they could monitor me and push me along'

One clear result from my research is that the Interact site helped some pupils to work more collaboratively. The development of social and co-operative skills, an integral part of the effective integration of ICT into the class, is clearly enhanced when the pupils have opportunities to compare and contrast each other's approach to, and progress with, the same generic topic. Comments such the following support the notion that the on-line support material enhanced interaction among the students:

'one time I was looking at the class on-line logs from home and I saw that one of my mates hadn't done much on his log, so I emailed him and told him to check out mine and some other boys ones and that gave him some ideas and then he got more of a move-on'

'When I read (Tom's) log comments, and saw what his teacher had written about his ideas that helped me to understand how to do my bibliography' (sic)

Such comments from the Year 10 pupils concerned supports the idea that providing the opportunity for the pupils to comment on-line about one another's projects helps interaction. In the words from a 'Computers in Schools' article:

'Synchronous communication provides opportunities for e-learners to interact in real time and therefore have a sense of conversation'[38]

Other pupils' comments about the ways they used the 'chat' opportunities to work more collaboratively included:

'I was able to add my own comments about my mates' work and some of his ideas on his log and he did the same for me'

'Some boys made stupid remarks about other boys work but the teacher deleted those!'

'Looking at other boys' on-line "logs" made me think about what 'keywords' I should use in my own project'

'Putting things up on the site such as the last year's winning project made it much easier for us all to look at and get some ideas from, whereas we couldn't have shared easily like that by passing the project around the class or from room to room'

Ironically, the interact site enhanced competition among the boys, as well as co-operation. Being able to so easily track the progress of every Year 10 pupil allowed the more competitive boys to try to outdo their peers. There was much on-line discussion, for example, on the length required for the best projects, with the boys having the erroneous idea that the longer their final report, the greater their chance for 'Excellence' certificates or the 'Best Research project' trophy.

The pupil's experience of Interact resulted in them being keen to use more wide-ranging on-line support in future.

What use would you make of a more comprehensive, multi-subject 'interact' site?

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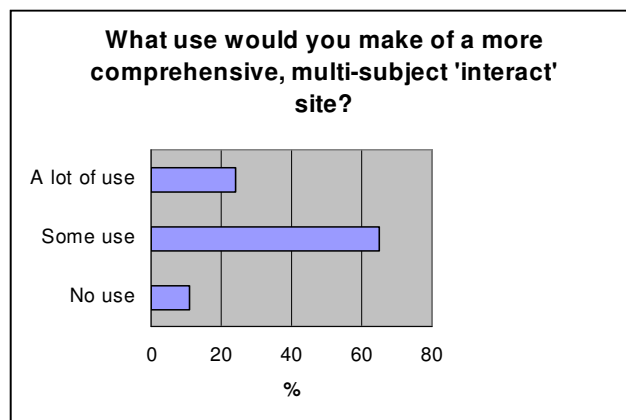
[38] <u>Computers in NZ Schools</u> July, 2003, pg 93.

The boys were also asked, having experienced how the Interact learning support system could be applied to one teaching unit in one subject, whether they would make use of a more extended version, which offered support for a wide range of subjects and curriculum levels.

Like their parents, the Year 10 boys stated that they would make good use of any future Interact site established at Lindisfarne, if it offered on-line curriculum support material for a wider range of subjects and levels.(see chart above).

(iii) <u>Teachers</u>

The main benefit seen by the four teachers involved in the Interact site was that it made it easy to track and comment on the boys' progress.

At stated times, each boy had to input 'milestones' onto his personal 'log', such as the three 'key-words' on which he was basing his research questions, and identify his elderly relative whom he planned to interview, which made it easy for teachers to track progress.(see samples below)

Samples of boys' 'Milestone' reports

Added by: karl van der linden on 29-06-05 at 13:47

milestone1

a: The year i am doing is 1939 and i am asking my grandad willhamis yohamis van der linden

b: I am doing world events, education and transport.

1: How did the start of the war afect your learning?

2: How did your contry adjust to the war being so close to germany?

3: What where the main forms of transport and did you have one?

Added by: Rodger Clark on 26-07-05 at 16:15 New

Milestone Report 2

A) 3 Books that I used are:

   1.The Weekly News, Those were the days, 1939

   2.Explore Australia (mainly pages 62, 97 and 98)

   3.The Chronicles of The 20th Century (chapter on 1939)

B) One interesting fact I have lernt so far is that when the offical opening of the Sydney Harbour Bridge by the cuting of the ribbon was due, a man on a hourse chraged the cerimonial party and cut the ribbon with a swoard before the Prime Minister could.

At any stage boys, teachers and parents could access and add a question or comment which would be responded to by the relevant individual.

Samples of 'Log' and 'Help-desk' comments from teachers

Added by: Rod Dowling on 12-08-05 at 10:25

wow! What interesting relatives you have, Karl I hope the interview is a good long one. Don't forget, if you want to borrow a camera or recorder to tape the interview, see your English teacher. Then you could 'dub' the tape onto VHS format and you and your family would have a really interesting 'live' addition to what seems to be a fascinating family history archive.

Added by: Dave Bovey on 04-09-05 at 16:41

hey sir do you know that in 1939 the german tanks had >amour as thick as your finger butt at the end of the >war they had amour 2.5 inches thick

...it obviously didn't help them in the end, did it? The Germans were very advanced technologically..many of their top 'V bomb' scientists went on to help America develop the first rockets to space, after the war.

Added by: David Bovey on 07-09-05 at 13:25

Very interesting, Karl. By the end of the war the technology had improved but it didn't do the Germans any good - they were finished by then.

Edit - Reply - Reply with original quoted

☐ **Added by:** karl van der linden on 23-08-05 at 14:59

i think this project is an excellant way to get to know how my grandparents

☐ **Added by:** karl van der linden on 23-08-05 at 14:51

i have been reasurching my grandfather and i have found his story very interesting he escaped from certian death several times and ran through a forrest for a few days

☐ **Added by:** karl van der linden on 23-08-05 at 14:39

I am doing my project on my grandfather but i think that it is important to also mention my grandmother. she has written an autobiography and it is very interesting -it is called **'An Unforgettable Journey'**

☐ **Added by:** karl van der linden on 23-08-05 at 14:36

I have also started my final copy and have finished editing

One theme dominated teacher feedback about the Interact site from the start:
'We think it is a good idea but we simply do not have time to make full use of its possibilities'. The problem of fitting yet another task into an already "overcrowded curriculum" ran motif-like through staff oral and written responses:

'I think the interact system is useful but more as a static site which pupils at both ends of the ability spectrum can access support, supplementary and extension material. Teachers simply do not have the time to make full use of the 'helpdesk' to offer one-to-one real time support for their students.'

'If you look at the fact that Lindisfarne teachers are pretty much on-board most days from 7.30am until 5.00pm, I don't think there should be an expectation to be sitting at our lap-tops at night or in the weekends to provide one-to-one support.'

'It always takes time to adapt to any new system and I feel our response as a staff has been limited because in a conservative College such as ours change is often threatening and slow to occur. If Interact is still in place in future I think we would make better use of it because we'd know more about its potential and the niceties of access etc'

'I do not think the Interact system improved my engagement. For my Year 10 class, many of whom are not the most able, this was just another thing they had to do.'

Most of the teachers think that the best teaching and learning occurs not with a computer but in a traditional teacher-pupil relationship, with the teacher being more able to respond to an individual pupil's mood, interests and 'teachable moments'.

'I think the best engagement on a teacher-student basis comes from a one-to-one relationship of shared enthusiasm developed in the classroom.'

They all concur, however, that Interact has a lot to offer in being able to provide easy access to curriculum and assessment related data:

' I do however think the boys benefited from being able to access details about what they had to do via the internet, and I'm sure many parents were grateful for the opportunity to access details about what their boy's English project involved.'

'The Interact site would be useful if students needed to look back at what the initial Achievement Standards, and the wording of them to realise how that guides standards in the exam. That would also assist parents in gaining an understanding of what's expected of their kids at each level.'

Several teachers said they could see that Interact could offer an easier way to track and comment on their pupils' progress than collecting and marking books:

'The chance to check progress on how my class was going, compared to other classes was a feature of the interact system I liked. In a way, it was my engagement with the 'assessment' rather than the 'learning' process that was enhanced by the new system'

Conclusions

The literature points to the fact that e-Learning can improve engagement in the learning of all participants..

'The role of technology in the 'engagement theory' is to facilitate all aspects of engagement. The use of email, online conferencing, web databases, groupware, and audio/videoconferencing significantly increases the extent and ease of interaction amongst all participants, as well as access to information'.[39]

The present research project shows that engagement in the learning process did indeed increase in this specific case study. On-line publication of curriculum support material was shown to improve engagement. Such engagement levels varied with the three groups involved in the study. 60% of the pupils involved said that their engagement increased and 55.6% of parents stated that their engagement in the learning also increased because of Interact.

The pupil group enjoyed the novelty of the exercise, and the majority said they valued the curriculum and assessment details offered on-line which were available to them at any time from school or home. As to be expected, the keener pupils made more use of the various aspects of Interact whereas the less motivated found it of more limited value.

Reasons offered by the pupils as to why they felt Interact increased their own engagement included: ease of access to the support material; motivation provided by having to input milestone 'log-ins'; increased opportunities for both peer co-operation and competition, and improved security and permanence of note-making. They also commented on better uniformity and consistency among the four teachers which sprang from the standardized instructions, time-line and assessment criteria published on-line for their Year 10 research project.

The boys acknowledged that the on-line material gave their parents better chances to familiarize themselves with their school research projects even though most didn't mind whether this resulted in more parental involvement in their work or not. They could also see how teachers could more easily track their progress using Interact, even if few some commented that few took full advantage of the 'interactive' elements of the site.

A smaller, but nevertheless a majority of parents also concluded that their engagement with their sons' learning increased because of Interact. The majority commented that they knew too little about what was happening in Lindisfarne classrooms, and this feeling was exacerbated by the confusion over NCEA. They stated they were grateful for the chance to find out details of at least one of their sons' major assignments and many clearly enjoyed helping the boys work on and complete an interesting family-based project.

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[39] 'Engagement Theory: A framework for technology-based teaching and learning', by Greg Kearsley and Ben Shneiderman, Instructional Science and Development, 1999**.**

There were three main reasons why a minority of parents said that the site made little or no difference to their involvement was that some parents want to remain distant from what they perceive as 'the boy's own work'. Such parents think that their son's teenage years should be a time for growing independent work habits.

The second reason that parents gave was that they had problems quickly down-loading the more graphic-heavy Interact pages. Others said they did not use computers much at home.

Thirdly, the minority of parents whose engagement did not improve with Interact stated that they always assisted their sons anyway, and would continue to show interest and support for their studies with or without any on-line help being offered.

The four teachers involved all stated that the Interact system had great potential which they did not have the time to utilize or fully explore, although they agreed that Interact was an easy way to offer on-line curriculum support which is beneficial to both pupils and their parents.

It is note-worthy that of the three groups involved, the education professionals were the least enthusiastic about the benefits of on-line support. The conservative nature of Lindisfarne College staff limited their involvement as much as their lack of time. Much literature on the topic states that to maximize the huge potential of e-learning, teachers must change from content-centred to student-centred learning. Otherwise there is little point in even beginning to use ICT as any more than a data-base or a tool to enhance the presentation of pupils' work.

"As long as schools are primarily about teaching rather than learning, there is little need for expanded information capabilities.'[40]

Conclusion summary points

1) On-line publication of curriculum support material increased engagement of pupils (60%), parents (55.6%), but not teachers, in this particular learning process.

2) The comparative lack of broadband access is a stumbling block to the development of such support systems by schools.

3) Parents, pupils and teachers made little use of the 'interactive' elements of the site.

4) The 'over-crowded curriculum' was the reason teachers gave for lack of time to be more involved in the interact site.

5) The most popular and effective way for schools to adapt their school websites for educational support would be as a portal for parents and pupils to access details of term and year subject plans and assessment timetables and for extra-curricula extension and revision material.

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[40] The Wired Classroom, article by Jamie McKenzie, ('Enhance learning with technology'. [www.enhancelearning.ca]

Recommendations

1. Secondary schools could do well to include curriculum-related support material on-line via their websites. A majority of pupils and parents appreciate more details about classroom units, assessment schedules and academic calendars being offered if they are easily accessible.

2. On-line curriculum support material developed to support specific teaching units at individual schools should be offered via school intranets and the wider Internet, because it will be accessed by pupils both from school and home-based computers for a range of reasons.

3. On-line curriculum-related material should be 'stand-alone' because secondary teachers do not have the time to offer on-going real-time 'help-desk' support to their students.

4. Engagement in the learning process from parents and pupils will improve with on-line publication of transparent curriculum-related material.

5. Intranet systems are an effective way to put into practice Ministry of Education goals to encourage and support parental involvement in their child's learning at secondary school. Such parental involvement has been shown to improve a pupils' learning and subsequent achievement.

6. The new (2006) ICT PD Cluster at Lindisfarne College, St John's College, Napier Boys' High School and Hastings Boys' High School should broaden Interact and develop it as a Regional learning support system targeting the specific needs of the boys' schools involved.

Appendix

The complete sets of pupil and parent questionnaires, and ethical forms are available to interested parties from the author, Rod Dowling, who can be contacted at Lindisfarne College, Box 2341 Hastings. Ph (06) 878-8182, Fax (06) 878 6955. email dowling.c.r@lindisfarne.hb.school.nz