

The Winston Churchill Memorial Trust of Australia

Report by – Melissa Kennedy – 2002/2 Churchill Fellow

Melissa Kennedy
9 Headley Place
Wagga Wagga 2650
(02) 69 22 32 65
melanne_k@yahoo.com

‘What we must learn to do we learn by doing’
Aristotle

To investigate the integration of Information and Communications Technology (ICT) into the Secondary School Curriculum in the UK and Ireland

I understand that the Churchill Trust may publish this Report, either in hard copy or on the Internet or both, and consent to such publication.

I indemnify the Churchill Trust against any loss, costs or damages it may suffer arising out of any claim or proceedings made against the Trust in respect of or arising out of the publication of any Report submitted to the Trust and which the Trust places on a web site for access over the Internet.

I also warrant that my Final Report is original and does not infringe the copyright of any person, or contain anything which is, or the incorporation of which into the Final Report is, actionable for defamation, a breach of any privacy law or obligation, breach of confidence, contempt of court, passing-off or contravention of any other private right or of any law.

Signed:

Dated:

Index	Page
1. Introduction	2
2. Executive Summary	5
3. Programme	6
4. Main Body	
4.1 Political and social issues concerning integration of ICT into the Secondary School Curriculum	7
4.2 Pre-service training and Professional Development Initiatives for integrating ICT into the curriculum	10
4.3 Teacher, student and parent attitudes towards integrating ICT into the Secondary School Curriculum	12
4.4 Ideas for integrating ICT into the Secondary School Curriculum at a classroom, department and school level	14
5. Conclusions and Recommendations	17
6. References	18
7. Web Sites List	18

1. Introduction

This report details the findings from my 2002 Churchill Fellowship to the UK and Ireland to investigate the integration of Information and Communications Technology (ICT) into the Secondary School Curriculum. I was able to learn a great deal from some of the ‘major players’ in this area of education in Ireland and the UK.

In the UK I was greatly assisted in finding schools to visit by teaching friends and University lecturers. I am indebted to them for their kindness. Unfortunately because of time and distance constraints I was unable to visit the British Educational and Communications Technology Agency (BECTA), as it is in Coventry, and my visit to Eton College was cancelled due to a scheduling error.

Although my intention was to focus on my primary teaching area of English during the fellowship, after a few days in the UK I realised I needed to broaden my focus. There were exciting projects happening in other secondary subjects and primary schools, on integrating ICT, which were not necessarily subject specific.

There were some difficulties during my fellowship, especially in Ireland, in gaining access to teachers and schools willing to talk with me and allow me to visit for the day. Many schools in Ireland expressed interest in the project but said that they were just too busy. I made requests to various schools before I arrived and was assured of assistance in finding schools by one of the universities. However when I arrived it turned out that the university was also very busy and couldn’t assist me more in this regard.

Key areas of study included:

- Political and social issues concerning integration of ICT into the Secondary School Curriculum
- Pre-service training and Professional Development Initiatives for integrating ICT into the curriculum
- Teacher, student and parent attitudes towards integrating ICT into the Secondary School Curriculum
- Ideas for integrating ICT into the Secondary School Curriculum at a classroom, department and school level

My visit to the UK and Ireland was an invaluable learning experience both professionally and personally. It would not have been possible without:

- all those marvellous people in the UK and Ireland who so willingly gave their time and help to make my Churchill Fellowship possible. People gave their professional assistance and some opened their homes to provide me with accommodation and delicious meals. I am especially grateful to Becca and Fiona Bailey, David and Carol Kyle, Sharon Beirne and Janice Clarke, Professor Mary Simpson and her husband Tom, all the team at South Camden City Learning Centre, Media Lab Europe and The Digital Hub.

- the financial assistance provided by the Winston Churchill Memorial Trust. In addition I would like to thank the team in Canberra, especially Meg, for their help, patient replies to my emails, support and guidance.
- Chris Ryan of the Qantas Business Travel Team. Organising the travel arrangements for such a project can be difficult and Chris went out of her way to help me in any way possible.
- my NSW teaching colleagues, especially those at St Clare's College Waverley, who provided encouragement and support during the preparation for and the period of the fellowship.
- my parents, siblings, in-laws and extended family. They always have faith in me and support me in everything I do. I thank them for their encouragement, love and support during the whole Fellowship process.

2. Executive Summary

Melissa Kennedy
Secondary School Teacher
9 Headley Place
Wagga Wagga
NSW 2650
(02) 69 22 32 65
melanne_k@yahoo.com

Churchill Fellowship Objective

To investigate the integration of Information and Communications Technology (ICT) into the Secondary School Curriculum in the UK and Ireland

Fellowship Highlights

- South Camden City Learning Centre & Highwire- Hackney City Learning Centre
- University of Edinburgh & Edinburgh Schools (Craigmount High School, Gylemuir Primary School & Queensferry Primary School)
- InterActive Education Project University of Bristol & Bristol Schools (City of Bristol College, John Cabot Secondary College)
- The Digital Hub Dublin & Media Lab Europe Dublin
- Mary O'Leary NCTE ICT Coordinator Cork Education Centre

Findings

There is a great need to create realistic professional development opportunities, develop practical materials and provide useful support for teachers trying to engage their students in learning through integrating ICT into the curriculum. I aim to:

- develop and promote a version of a professional development model that encourages small, localised projects and the creation of ongoing support networks to empower students and teachers to use ICT as a teaching and learning tool (eg: Empowering Minds Project <http://empoweringminds.mle.ie/>),
- find ways to develop a NSW project that awards grants to teachers to develop ICT curriculum materials to share with colleagues thus encouraging and rewarding innovation (eg: www.teachnet.ie),
- promote the use of software such as *Conception*, *TextEase* and *Kar2ouche*; and the teaching tool the electronic smart board,
- develop a useable web site that features practical teaching ideas, website links and international collaboration opportunities encouraging teachers to integrate ICT into their subject,
- write an article for the NSW English Teacher's Association Metaphor,
- develop lesson ideas for classroom multimedia projects with the view of putting them on a web site or making them available in print form,
- facilitate workshop/s for the NSW English Teacher's Association based on my fellowship.

3. Programme

London 24 January - 31 January

- Highwire- Hackney City Learning Centre
- South Camden City Learning Centre
- South Camden Community School
- Edmund Walla Primary School

Cambridge 3 February

- Sue Brindley Lecturer in English Education, University of Cambridge

London 7 - 6 February

- Discussions with Ian, an East London Primary School Teacher
- Rickards Lodge High School Wimbledon

Edinburgh 9 - 12 February

- Mary Simpson, Professor of Classroom Based Learning, University of Edinburgh
- Gylemuir Primary School
- Craigmount High School
- Tom Conlon, Senior Lecturer in Information Technology, Heriot-Watt University
- Queensferry Primary School

Aberdeen 13 -15 February

- Bankhead Academy
- Aberdeen City Council Education Department

Bristol 18 – 20 February

- InterActive Education Project Graduate School of Education Bristol University
- City of Bristol College
- John Cabot Secondary College

Dublin 25 February – 20 March

- The Digital Hub exhibitions, talks and displays
- Media Lab Europe
- Digiboarding Project- Rough Magic Films
- National Centre for Technology in Education (NCTE)
- Michael Hallissy from The Digital Hub
- Centre for Research in IT in Education (CRITE) Trinity College Dublin

Cork 7 March

- Mary O’Leary NCTE ICT Coordinator Cork Education Centre/ Education Officer Post Primary ICT NCCA- (between the two roles at the time I met her)

Skerries 1 April

- Skerries Community College

4. Main Body

4.1 Political and social issues concerning integration of ICT into the Secondary School Curriculum

Education is shaped by politics. Obviously this is just as true in the UK and Ireland as it is in New South Wales. An individual and/or institution's (government/school etc) beliefs about the nature and purpose of education have a fundamental effect on the use of ICT in schools.

If education is seen as a way of gaining a certain grade to get a certain degree for a certain job to live a certain life then the use of ICT, in the secondary school especially, is more likely to have a narrow prescriptive focus. Conversely if education is seen more broadly as a way to gain skills, knowledge and experiences to become a life long learner then ICT is more likely to be used in innovative and engaging ways to support the development of higher order thinking skills, interpersonal and communication skills vital in a lifelong learner.

In the UK's National Curriculum document (1999) the first sentence of the foreword section highlights the focus of the education system, 'The National Curriculum lies at the heart of our policies to raise standards.' In order to raise standards the government makes use of regular testing and national examinations; the results of which are reported in publicly available National League Tables. In addition, a body called OFSTED (Office for Standards in Education) conducts a regular and systematic inspection of each state school to report on all facets of its operation.

Although teachers are encouraged to use ICTs in their subject, as stated in the same document, 'Pupils should be given opportunities to apply and develop their ICT capability through the use of ICT tools to support their learning in all subjects...', ICT skills and knowledge are not examined. As ICT skills and knowledge are not examined, in this exam driven education system, many teachers decide to spend more of their class time on aspects of the curriculum that are examined. Teaching through and with ICT takes time and time is a commodity that, for them, is in very short supply. Most of the teachers I met explained how they would love to teach through and with ICT more often but because of the nature of the National Curriculum how difficult it is for them to achieve this aim.

The irony for me, as an outsider, was the fact that many of the teachers have far more ICT resources and opportunities than I have ever had but feel they are not able to use them as effectively as they would like. This really highlighted how important it is to have a curriculum and assessment structure that embraces the use of ICT as a teaching and learning tool if one wants to make effective use of the hardware and software provided by the government.

The Irish Education System does not currently use league tables but the secondary school system (Second Level) is exam driven in that students need to achieve a certain number of points to be eligible for a University placement. There are only a limited number of Universities and therefore competition is fierce. To this end some of the

more innovative projects I learned about (eg: Empowering Minds and Digiboarding) involve younger age groups.

There is a certain irony that although Ireland is the second largest software manufacturer in the world ICT is not formally part of the nation's curriculum. However schools, especially primary, do use ICT as a teaching and learning tool because of pressure from parents and their own realisation of its value as a teaching and learning tool. There are wonderful interactive projects happening throughout the country, especially at First Level or primary school (www.ncte.ie).

At Second Level (secondary school) in Ireland it is much harder for schools to integrate ICT into the classroom with the current curriculum and assessment structure. Education at Second Level is seen as a means to gaining a university place or a technical qualification and therefore many teachers will spend the majority of class time ensuring that the students will achieve that aim. There is, however, a Second Level year group called Transition Year where individual schools decide the curriculum and in many schools it is there that some very exciting work is being done in an effort to engage students in their learning.

There is some exciting work being done in many secondary schools in the UK such as South Camden Community School, City of Bristol College and John Cabot City Technical College. However all three schools are supported in the integration of ICT into the curriculum by an outside organisation. In the case of South Camden Community School the resources and expertise of the South Camden City Learning Centre assist it to enhance the educational opportunities of its students. City of Bristol College and John Cabot City Technical College were working in partnership with the University of Bristol's InterActive Education (www.interactiveeducation.ac.uk) team on the English Subject Design Initiative when I visited. At three other schools I visited, Craigmount High School, Bankhead Academy and Rickards Lodge High School there were far less ICT resources and opportunities for teacher professional development.

There are marked differences between two London schools, Rickards Lodge High School Wimbledon and South Camden Community School in terms of ICT resources and professional development opportunities. Some people suggested that there are political and socio-economic reasons behind this disparity. South Camden is in a poor, ethnically diverse area conversely Rickards Lodge is in the wealthy borough of Wimbledon. South Camden has relatively good ICT facilities itself and houses the South Camden City Learning Centre on its premises whose excellent resources it can access quite freely. Rickards Lodge has fewer ICT resources and its staff has far fewer opportunities for ICT professional development.

It seems that a great deal of funding was injected into South Camden because of its ethnic and socio-economic background in an attempt to address inequalities. This appears to have benefited many in that community. However some people in the more suburban areas of London and its environs have pointed out that perhaps schools in other areas are missing out.

The digital divide and questions of equity are of major concern to all involved in education in the UK and Ireland. In the UK one of the major initiatives to address

these issues is the establishment of City Learning Centres. Although it is very hard for many teachers to integrate ICT into their classroom practice there are wonderful opportunities being made available to teachers and students to learn through and with ICT at the City Learning Centres (CLCs) in major urban areas of the UK.

Each of the City Learning Centres

(www.standards.dfes.gov.uk/excellence/policies/CLC/) set up in the UK has a brief to provide the local community in which it is situated with a state of the art ICT resource. The centres are used by school children during the day and access is available for adults at other times. The CLCs are part of the government's *Excellence in Cities* initiative, which aims to raise educational standards and broaden educational opportunities in inner city areas. These areas are traditionally under resourced and students are seen to be 'at risk'.

The two I visited were South Camden City Learning Centre (www.southcamden-clc.org.uk) and Highwire - Hackney City Learning Centre (www.highwire.org.uk). I was amazed by the excellent facilities available at these centres. Both have two or more computer rooms featuring the latest computers, top quality printers and scanners. In addition they have broadband Internet access and a good supply of digital still and digital video cameras. The latest Industry Standard software is available for use and each centre has a software library. It was wonderful to enter such an environment totally dedicated to teaching through and with ICT. The staff are excellent practitioners of their craft, whether that be teaching or technical support. The students are encouraged to see ICT as an integral part of their life and the standard practice is to use Industry Standard software so students are as prepared for the workforce as possible. At South Camden City Learning Centre there are particular efforts made to encourage parents and the general community to develop their ICT skills for work and lifestyle needs.

In Dublin one of the primary initiatives to address the digital divide is the learning sector (Liberties Learning Initiatives) of The Digital Hub Project- International Digital Enterprise Area (www.thedigitalhub.com). The aim is to create an information infrastructure for new digital media enterprises in Ireland. It is situated in an underdeveloped and less affluent area of Dublin called the Liberties. Last year The Digital Hub sponsored a project called Digiboarding where young kids in the area were taught skateboarding and computer and digital technology skills (www.johngerrard.net/digiboarding/). A skate park was built in the area and local 10-14 year olds were taught how to skateboard by experts in the field. At the same time the young people filmed their skateboarding experiences with digital cameras, including a 'helmet cam'. The young people, to create a documentary and other media products, then manipulated these digital video images. Experts in the computer field were available to assist them in this process. From one of The Digital Hub staff, who works in the Learning sector, I heard of other projects that the centre is working on with local students and teachers. One is a storytelling project called *Children of the Liberties* and the other a short film project with Second Level students. Some of these short films were shown on the Irish television station RTE during the week of 22/3/03.

On a smaller scale, at Queensferry Primary School Edinburgh (www.queensferry-ps.edin.sch.uk/) the Head Teacher (Principal) tries to open up the school's computer

room after school to encourage students and parents to use the resource. She runs an OOSL (Out of School Learning) program to try to address the digital divide issue. Initially they wanted to aim this program at students who were technologically disadvantaged but they had to revise this as everyone wanted to join and they could not devise equitable criteria to judge who should be included. The need to target students was brought about by the limited supply of hardware. The Head Teacher, also hopes to run more formal ICT training courses for parents in the near future. She explained the local context for me in great detail. One of the interesting points about Scotland is that local councils run the state schools. Apparently all the councils want to be better than each other. Their local council sold a major shopping centre to private enterprise and gave grants for computers to local schools.

Private industry sponsorship seems to be becoming more common in the UK and Ireland, especially in the area of ICT. In Aberdeen the oil companies used to give the local schools surplus computer equipment. This is less common now as the equipment is often too old for the schools' purposes. In Dublin Diageo (Guinness Breweries' parent company) sponsors The Digital Hub learning initiatives in an effort to enhance the learning opportunities for the local community.

4.2 Pre-service training and Professional Development Initiatives for integrating ICT into the curriculum

Everyone I visited during my fellowship acknowledged the importance of effective pre-service training and professional development in integrating ICT into the curriculum. One teacher, from the Empowering Minds project, put it well when she said it is imperative to break the link with the stupid machine that sits on the desk; you need to show how technology can be used in other ways.

Teachers need to learn teaching and learning strategies that use ICT as a tool rather than just how to use a software program, hardware, peripheral or the Internet. In the past teachers tended to be trained in how to use a computer, digital camera, Internet resource and/or scanner. Little attention was paid to *how* you could effectively integrate these technologies in meaningful ways into your subject in order to engage your students and enhance their learning experiences. In both the UK and Ireland this emphasis is shifting to what they call *teaching through and with rather than about ICT*.

Many people in society (including many teachers) have the attitude that the teacher is the repository of all knowledge. For many teachers it is very threatening 'not to know' something. ICT is an area where one can never know everything and therefore many teachers are reluctant to use ICT as a classroom tool as there is a distinct possibility that they will be exposed as not knowing everything. Through effective training and professional development some of this fear can be faced and teachers are able to support each other.

One of the best professional development models trying to help teachers overcome this fear is the Empowering Minds Project (<http://empoweringminds.mle.ie/>) run by Deirdre Butler, Jamie Rasmussen and Glorianna Davenport at Media Lab Europe. They call their project 'professional development through construction of and dialogue about cybernetic worlds'. Basically teachers learn alongside their students

about robotics technologies. Deirdre calls it 'co-learning' and stresses that 'from a teacher development point of view it is an evolving, organic model' of professional development. The focus is on an emergent design approach. A network of collegial support is established through regular informal meetings and mailing lists. I was very impressed at Deirdre's leadership of the project and the whole emphasis on changing the teaching and learning strategies in the classroom to empower people (both students and teachers) to become life long learners. It was initially aimed at primary school teachers and students and there are plans to expand to include secondary teachers in the project.

The Empowering Minds project originated from an Irish government initiative called the Schools Integration Project (SIP) (www.ncte.ie) run from 1998-2000. The government provided funding for projects developed at school level to integrate ICT into the curriculum. It proved very popular and there were lots of exciting projects undertaken. It was intended to be a short-term initiative and so the funding ended after two years. The theory was that the lessons learnt from the SIP project would inform future ICT policy. This is still in the process of happening and most of the original projects have ended. Fortunately Deirdre was able to secure independent funding and continue the Empowering Minds project. It appears that two years funding is not enough to bring about long-term change in the way teachers use ICT in the classroom.

A marvellously simple yet effective professional development project is TeachNet Ireland (www.teachnet.ie). Teachers are given grants to create web projects that are put on the TeachNet website to share with colleagues worldwide. The Citigroup Foundation and the Atlantic Philanthropies sponsor TeachNet Ireland. This project provides incentives for teachers to create practical, useful resources and establish professional relationships with like-minded colleagues. Michael Hallissy, one of those who manage the project, explained how they are keen to expand to the UK and perhaps Australia. There is terrific potential to establish a similar project in NSW. This is the type of easily accessible project from which busy teachers can benefit greatly.

I am very interested in the work being done by the InterActive Education group at the University of Bristol (www.interactiveeducation.ac.uk). This project has a number of different subject design teams looking how ICT is integrated into formal and informal learning situations. The University researchers (many of whom are ex-classroom teachers) work in partnership with practising classroom teachers. They believe that '...effective and innovative practices in teaching and learning require a combination of practitioner and researcher expertise'. This is a valuable form of useful and relevant professional development for classroom teachers.

Pre-service training has progressed rapidly in recent years according to many of the teachers I spoke with and now, depending on your University, there is excellent work being done in this area. The Institute of Education at the University of London (<http://ioewebserver.ioe.ac.uk/ioe/index.html>) runs some innovative courses. The M.Sc. (IT in Education), admittedly postgraduate, at Trinity College Dublin (www.cs.tcd.ie/crite/) is an interesting course that encourages students to create interactive tools for learning.

There is a multi-layered approach to professional development in both the UK and Ireland. Both have online portals such as (www.ncte.ie, www.scoilnet.ie, www.ngfl.gov.uk, www.learn.co.uk). These act as easily accessible resources for teachers to find lesson ideas, useful web site links, answers to common queries, training opportunities and professional contacts. There are City Learning Centres in the UK and Education Centres in Ireland, which act as hubs for courses and professional development in the local area. The UK has also had an ICT training program called NOF (New Opportunities Fund). In theory it had great potential but, according to everyone I spoke with, the government did not take into account practicalities like providing enough funding for supply (casual) teachers while the classroom teachers were involved in the training.

In the UK teachers feel strongly that they don't have enough time to do professional development courses in their own time. The workload and day-to-day pressures leave many with neither the time nor the impetus to undertake courses. There are many courses available, especially at the CLCs. There are courses run during pupil free days called 'Inset Days'. In Ireland there are currently industrial relations issues about teacher professional development and the fact that no allowance is made during school time. Teachers are required to undertake professional development in their own time and there is no formal accreditation program.

At Gylemuir Primary School Edinburgh (www.gylemuir.edin.sch.uk) the Head Teacher (Principal), is doing tremendous work in providing informal and formal professional development opportunities for her staff. One of the best examples I saw involved one of the teachers being encouraged to take home a digital camera for the weekend and make a short film to learn how to use imovie software. The result was then shown to the students at a special screening the following week. She was given encouragement, access to equipment and expertise and recognition. The imovie was sent to Gylemuir's European partner schools in the Comenius project.

Although there are some wonderful and successful professional development programs operating in the UK and Ireland they are not widespread. Many teachers still miss out on such opportunities. Consistently I heard complaints about a lack of time to undertake professional development, a lack of funding and a lack of relevant courses. It seems that many believe the traditional way of professional development 'to do a course' lacks relevance and usefulness. This method lacks the ongoing support needed to implement any new skills or knowledge in the classroom. The small scale, evolving, organic model of professional development used by the Empowering Minds project is one that is supported by many teachers and researchers. It is thought to empower people to learn and make sustainable changes in their teaching and learning practice. A valuable side effect is that it encourages higher rates of teacher retention because they develop extended collegial networks and are able to work on stimulating projects. This is particularly relevant to the UK and Australia as both have serious issues with teacher retention. It is apparently a well-documented fact that many teachers leave the profession after less than five years.

4.3 Teacher, student and parent attitudes towards integrating ICT into the Secondary School Curriculum

Teacher

Teachers' attitudes towards the integration of ICT vary widely depending on their own beliefs about education and experiences with ICT. Most teachers I spent time with were very positive about ICT and fervently believed in the need *to teach through and with rather than about ICT*. I was continually amazed by the passion and resourcefulness of many who have faced or continue to face obstacles in their efforts to use ICT as a teaching and learning tool. For some it is a shortage of funding or lack of time in the day for others it is the lack of support from colleagues or access to resources.

Teachers know how difficult it is to engage students in their learning and see ICT as a wonderful way to achieve this aim. This is especially true in secondary schools. Another positive aspect that many teachers highlighted is how using ICT as a teaching and learning tool encourages students to develop independent thinking and problem solving skills. They stressed how in our information rich and rapidly evolving society these are some of the most valuable things they can teach their students.

I did meet some teachers who were scared of integrating ICT into the curriculum. I spent time at one primary school where one teacher was very scared and negative. It seemed that this was largely due to a lack of personal confidence with any form of technology. At a high school I discovered that some teachers were quite negative about integrating ICT into the curriculum because it would require them changing the way they teach and they were not prepared to do that.

Student

It was no surprise to discover that students, in the UK and Ireland, are very keen on the integration of ICT into the curriculum. What they aren't keen on are teachers who fail to take into account students' prior learning in designing lessons that use ICT and teachers who use ICT as a 'babysitting' device. Some students have a great deal of ICT knowledge but often this will be ignored by a teacher who is not confident enough to utilise their expertise or not willing to take the time to assess the prior learning of the class. Another source of frustration is teachers who use ICT as a 'babysitting' device and don't design engaging lessons. Many students explained how it's fun at first to be told to 'just search on the Internet' or 'draw a picture using that program' but after a while it is boring and pointless to them. Some older students explained that a lot of that is due to teachers feeling like they always have to be in control or just not feeling confident enough to use the technology effectively.

Most are very keen and I was delighted to see the high levels of engagement of students at the CLCs I visited in London and at various schools. They especially like project work. At Craigmount High School I spent time with a Special Needs student who benefits greatly from the integration of ICT into his learning. When I first arrived he couldn't sit still, repeatedly distracted others, used inappropriate language and exhibited attention-seeking behaviour. Within ten minutes he was actively engaged in working through software programs (with my assistance) to help him with his Maths and Science.

A student at South Camden Community School, commented how much better his ICT experiences are now that there is a CLC on his school's campus. He said that there is more good quality software; there is broadband Internet access and 'more cameras and stuff'. From observing the students I could see that ease of access to hardware,

software and expert staff were of particular importance to them. In terms of classroom activities having broadband Internet access clearly enriched their learning opportunities because there were fewer access problems.

Parent

Parents are keen for their child to be proficient in using ICT because they see it as an essential tool for gaining high marks at school, achieving well at university and then gaining and keeping a 'good job'. Most parents, if they can afford it, buy their child a computer. They expect their child to be learning how to use ICT at school and many actively fund raise to secure extra funds for the purchase of equipment their child's school may be lacking. Some parents are prompted to improve their own ICT skills when they see the progress their child is making at school. I discovered that many parents were also very interested in multimedia ICT projects that their child is involved in. This was especially evident in the material I read on Ireland's Schools Integration Project (SIP).

A valuable text I read, in manuscript form, which discussed parental attitudes to ICT use is ScreenPlay: Children's Computing in the Home by Keri Facer, John Furlong, Ruth Furlong and Rosamund Sutherland. Rosamund Sutherland is one of the Project Directors of InterActive Education at Bristol University. It explores the different uses of and attitudes towards ICT in the home. In doing so it also discusses students' use of ICT at school.

There is great concern about the dangers associated with using the Internet and spending an excessive amount of time at the computer. In general parents expect schools to be teaching their child the skills necessary to safely use the Internet but they also invest in net nanny software. Some parents have specific rules about when and where the Internet may be used in order to monitor their child's activities.

4.4 Ideas for integrating ICT into the Secondary School Curriculum at a classroom, department and school level

School Level and Department Level

At a school and department level it seems important to get the hardware, policies and professional development issues right. Successful integration of ICT into the curriculum requires more than just putting the computers in the classrooms. There needs to be a whole school collaborative approach. In the UK I heard of instances in the late 1990s where only Science and Maths classes could access computers in some secondary schools. English teachers were told that their students didn't need to use the computers in their subject and so were denied access. This has changed in recent years.

One of the major issues in secondary schools is access to hardware. Many schools put their hardware in computer rooms or labs and teachers have to book to take their classes there. In the UK and Ireland I discovered that many are now moving away from this model as the sole means of access and putting two or more computers in 'regular' classrooms or providing mobile access through the use of laptops (especially

wireless). This seems to be a positive move to encourage integration of ICT into the curriculum.

Another positive move in the UK and Ireland is the use of schemes to supply teachers with subsidised laptops to encourage them to use ICT more widely in their teaching and administration. It appeared to be very successful as it enabled teachers to work anytime and anywhere. It also means that they don't have to waste time booking and searching for equipment. As one teacher put it one when you have access to your own laptop you feel more comfortable about using PowerPoint presentations in class and generally experimenting. Freedom to experiment is one of the most important aspects of encouraging teachers to effectively integrate ICT into the curriculum.

I was repeatedly told of the importance of having a regular roll out of computers into schools. Too often schools end up with outdated equipment that does not meet their needs. Broadband Internet access is another area that is seen as vital in every school. Teachers and students need to know that they can get Internet access when they require it. A lot of valuable learning time can be lost if there are problems with Internet access. This is also linked to the fact that here is a lack of adequate technical support in all the schools I visited. Many people expressed serious concerns about this issue and the need for governments to address it in effective ways.

Another point that was made on numerous occasions during my Fellowship was the importance of effective and continual professional development. Two of the most effective examples I discovered were the Empowering Minds Project and TeachNet Ireland. There is also excellent work being done by the NCTE in Ireland working through the Education Centres and through the CLCs in the UK. Some people were adamant that you needed to have a *Teaching and Learning Coordinator* position in every school. This person would be responsible for helping teachers integrate ICT into their subject and support them in developing different methods of teaching.

Classroom Level

During my Fellowship I witnessed lots of exciting activities involving the integration of ICT into the curriculum. There were two recurrent themes. Firstly in the most effective activities teachers stressed to the students that ICT was merely the tool for this set of learning experiences and secondly the most effective activities didn't necessarily involve the most advanced ICT.

An area that I was particularly excited about was the use of digital cameras and other ICT to record the learning process and encourage students to reflect on their learning. This was done particularly well in the Empowering Minds project and in the InterActive Education project at Bristol University.

At South Camden City Learning Centre I assisted a staff member with a Year 5 class who were making their own TV advertisements, using digital cameras and editing software, for a food product they had 'created'. The CLC staff member and the classroom teacher had organised a very structured program where the students took responsibility for their own learning and the finished project. This was a very successful project that really captured the students' imaginations.

At Craigmount High School I helped with a class investigating poetry through exploring poetry web sites (eg: www.poetry4kids.co.uk). This involved them reading poetry online, writing their own poetry and generally experimenting with words. The students worked in pairs for these activities and showed a high level of engagement throughout the lesson.

In Bristol I attended one class where Senior English Literature students were designing, in small groups, their own websites about a selection of literary texts on the First World War. It was interesting to see how they thought through issues of how people read texts and appropriate links between different web pages. At another Bristol school my imagination was sparked when I attended a class in which Senior Language students were using the Online Oxford English Dictionary and an online newspaper resource to trace the entry of 'new' words into the English language eg: *pukka* and *minger*.

In Ireland I was very excited by a talk and documentary screening I attended on the Digiboarding project (www.johngerrard.net/digiboarding/). The combination of peer learning, sport and computers is particularly appealing to students and teachers. The *Children of the Liberties Project* and the short film making for Secondary Students project showed me how important it is to design active learning activities for students. When they are directly involved in 'doing something' their levels of engagement and interest are significantly higher.

The following is a list of activities that I found in a UK text recommended to me called ICT Activities for Key Stage 3 English by Geoff Barton. This is apparently one of the texts used by English teachers in the UK to integrate ICT into the curriculum.

- poetry brainstorming
- dual narratives
- writing a newsletter
- spreadsheet survey
- wide reading database
- multimedia authoring
- creating a newspaper advertisement
- making brochures
- writing a cybernovel - Choose your Own Adventure tale
- proofreading a text on screen
- summarising a text on screen
- designing leaflets
- designing a poster
- poetry presentation
- using find and replace and thesaurus functions in a word processing program to create atmosphere in creative writing

Another useful text is Making Multimedia in the Classroom: A Teachers' Guide (Routledge/Falmer) by Vivi Lachs. She gives many useful suggestions on how to create multimedia learning projects in primary and secondary classrooms. There are pages in the book in which she lists ideas for integrating multimedia making activities into different subjects.

5. Conclusions and Recommendations

- The emphasis needs to be on teaching through and with ICT rather than about ICT.
- The most important resource any school has is its teachers. They need to be supported with effective and adequate technical and learning support in the use of ICT.
- Schools need to establish effective relationships with private and public organisations that can help them to integrate ICT into the curriculum (eg: in Ireland the NCTE and The Digital Hub).
- A professional development model that encourages small localised projects and the development of ongoing support networks is most effective in empowering students and teachers to use ICT as a teaching and learning tool (eg: Empowering Minds Project www.mle.ie). It also has important spin-off effects for the retention of teachers in the profession, morale, collegiality and community-school relations. This has great potential in NSW.
- Awarding grants to teachers to develop ICT curriculum materials to share with colleagues encourages and rewards innovation. It provides a bigger stage than his/her own classroom and is a valuable form of professional development (eg: www.teachnet.ie).
- The Curriculum has a major impact on the integration of ICT into the classroom. In the UK and, to a lesser extent Ireland, great emphasis is placed on sitting examinations in the secondary school. As a result it is extremely challenging to find the time and opportunities to develop innovative ways to use ICT as a teaching and learning tool. Fortunately the NSW curriculum developers have started to embrace the use of ICT as a teaching and learning tool.
- Software that could be useful in NSW schools includes *Conception*, *TextEase* and *Kar2ouche*. Electronic smart boards are an invaluable tool we could make very effective use of in NSW.
- For teachers to *want to* integrate ICT into their subject then they need to be encouraged to find out what's in it for them personally.
- Money for ICT education needs to be sourced from private as well as public organisations (eg: www.thedigitalub.com) in order to make projects sustainable.

6. Resources

Barton, Geoff (2000) ICT Activities for Key Stage 3 English Heinemann: London.

Facer, Keri et al ScreenPlay: Children's Computing in the Home (manuscript)

Galvin, Conor (ed) (2003) Sharing Innovative Practice - The NCTE's Schools Integration Project 1998-2000 NCTE: Dublin.

Lahs, Vivi. (2000) Making Multimedia in the Classroom: A Teachers' Guide Routledge/Falmer: London.

National Curriculum 1999 published by Department for Education and Employment and Qualifications and Curriculum Authority: London.

South Camden City Learning Centre brochure 2002 (designed by Andy Rowland)

The Strategy Document- The Digital Hub brochure (Nov 2001) Digital Media Development: Dublin.

7. Web Sites List

Teach It	www.teachit.com
National Grid for Learning	www.ngfl.gov.uk
EduSeek	www.eduseek.com
Learn UK	www.learn.co.uk
World Class Arena	www.worldclassarena.org
Teaching Tips	www.teachingtips.co.uk
London Grid for Learning	www.lgfl.net
Dictionary	www.onelook.com
UK National Curriculum	www.nc.k.net
Geoff Barton's web site	www.geoffbarton.co.uk
Skool	www.skool.ie
Spin a Web	www.spinaweb.ie
Kar2ouche	www.kar2ouche.com
Espresso	www.espresso.co.uk
School History	www.schoolhistory.co.uk
Eircom Learning	www.eircomlearning.ie
Conception	www.parlog.com
The Learning Shop	www.lshop.co.uk
BECTA	www.becta.org.uk
Poetry4kids	www.poetry4kids.co.uk