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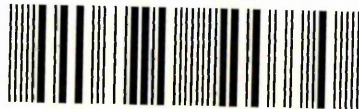
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ICT Integration: Newly Qualified Primary Teachers in Ireland

Classroom and School Experiences

David G. O'Grady

A dissertation submitted in partial fulfilment of the requirements of
Sheffield Hallam University
for the Degree of Doctor of Education



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Abstract

This research explored the school and classroom experiences of thirteen newly qualified primary teachers (NQPTS) in Ireland in relation to Information and Communication Technology. These teachers had access to personal laptop computers as student teachers and participated in the ICT elective module in their final year in college. The research adopted a case study qualitative approach, using semi-structured interviews and observations in the classrooms of the participants. Thirteen in-depth interviews were audio recorded in the participants' schools, transcribed and later analysed using Nvivo. Further evidence was gathered through unstructured and unrecorded conversations with the principals of the schools along with documentary evidence from the NQPTs inspectors' probationary reports. As a result, this thesis examined the issues faced by these young teachers as they attempted to integrate ICT into their daily professional lives. The research further explored the role of the ICT school co-ordinator, the principal teacher, the community, the school inspectorate and the national ICT advisory service and how they supported or hindered the NQPTs in relation to ICT classroom use.

The main findings of this study indicated that these thirteen NQPTs:-

- Were striving to integrate and infuse ICT into their daily work;
- Were satisfied with their pre-service experience of ICT, including the laptop programme;
- Argued that more time be allocated to ICT classroom management issues during pre-service;
- Suggested that ICT integration should play a more prominent role during teaching practice;
- Suggested that teaching practice supervisors be more supportive of the role of ICT;
- Acknowledged the support of their head teacher and school based ICT co-ordinator regarding ICT integration;
- Questioned the lack of support they received from the school inspectorate during their probationary year in relation to ICT;
- Had very little support from the national ICT advisory service during their probationary year.

The thesis concludes with six recommendations, posed as questions, relating to the role of the National Centre for Technology in Education (NCTE, Ireland), the role of the school inspector, in particular during the young teacher's probationary year, the role of the school's ICT policy, the role of the colleges' of education supervisors in Ireland during teaching practice, the value of laptop technology during pre-service and finally what form of ICT in-service is relevant to NQPTs and how these recommendations may support young teachers in future years.

Prologue

The Journey: Personal Reflections

I began this journey in March 2002. Along the way I have completed a number of assignments, all with the aim of preparing to complete the final dissertation. Taking this journey meant literally many hours spent flying from Ireland to Manchester, trains from Manchester to Sheffield and long car journeys from Limerick to Dublin or Cork Airports. I also spent many hours in discussion with fellow students en route and late into the night during the weekend sessions in Sheffield. Often, as we waited for the delayed flight back to Dublin or Cork or the cancelled train from Sheffield to Manchester, we pondered as to why we were putting ourselves through this arduous task. Approaching mid life, a family making demands on time and funds, social life consigned to the back burner and at times, a neglected partner and editing a book on ICT in Irish Primary Schools during 2004, meant I had to manage my time like a circus juggler. Along with that I had the day job. Achieving this accolade would not increase my opportunities within my profession nor would it result in extra salary. So why do it? The answer is personal satisfaction and a need to improve my own practice in my chosen profession as a teacher. Since gaining my first teaching qualification in 1973, I have always striven to improve my practice by attending in-service courses and taking post graduate courses. In 1981, I completed a technology course on using visual aids in teaching and in 1985 I began work on a computer course leading to a Graduate Diploma in 1987. From 1983 to 1992, I worked on a part-time basis with the Limerick Education Centre producing electronic teaching resource material for primary teachers in Ireland. I returned to University in 1993 and completed a Masters programme in Educational Management. I left classroom teaching in 1996 and began

working with undergraduate B.Ed. students on integrating technology in the classroom. Working in a third level environment and leading a post graduate degree on technology in the primary school in 1998, put further demands on my ability to work at this level. One of the expected outcomes of this study is to show the relevance of the findings to professional practice. As a practitioner, I needed to improve my practice and by working through a research programme focusing on improved practice, the post graduate programme leading to an Ed. Doc seemed the most appropriate route to take.

Throughout this journey I met with a very dedicated group of young primary teachers. I had known them from their first week in college as they were members of the volunteer laptop computer programme and all completed the ICT elective in their final year. Meeting them in their own classrooms during the winter of 2005 and spring 2006 was the high point of this study. Observation of their work and interaction with the children seemed to suggest that they had indeed chosen the proper career. The majority approached the use of ICT enthusiastically and agreed that it had an important role to play in their daily work. A few, through no fault of their own, were finding it difficult to integrate ICT on a regular basis but had a positive attitude to its use. I witnessed at first hand the problems of integrating ICT in the real world of the classroom. This experience will be of immense benefit to me when discussing ICT issues with my present and future cohort of B.Ed. students.

Deciding on a methodology to undertake this study proved problematic. Time and finance did not allow for a large scale quantitative study. Having trawled through the literature, a definition of an educational case study proposed by Bassey that

educational research is critical enquiry aimed at informing educational judgements and decisions in order to improve educational action (Bassey 1999, p. 39) and further advice from Collis & Knezek that

research looks broadly at the landscape of previous experience ,translates this to a local situation which becomes impacted by many other variables , and from the local experience can contribute to the broader landscape of experiences but in a way that brings a new view of this landscape (Collis & Knezek 1997, p.5)

suggested that case study was the appropriate methodology for this work. However, Case Study as a methodology has its limitations. These limitations will be discussed later.

As discussed above, I wanted to improve my own educational practice. The literature on ICT in education, while substantial, was disappointing. Yes, I encountered examples of similar work being undertaken in other institutions across the world and cases of successful ICT initiatives in schools and classrooms, but there seemed to be no sustainability or longevity in these cases. The most recent comment by Bull and Thompson, editors of the *Journal of Computing in Teacher Education* paints a very bleak picture for the future of ICT in education, *However it [ICT] has not made appreciable changes in the way that schools themselves operate or upon student learning outcomes* (Bull and Thompson 2006, p. 2). I was gratified to find that our work with pre-service students is in line with international practice. However, in Ireland, we need to place much more emphasis on ICT and field practice, encourage supportive supervisors and work on classroom management skills. Two major specific local Irish issues were brought to light during this study regarding ICT and NQPTs. They were the role of the national ICT advisory service and the role of the school inspector during the probationary year.

On a practical note, I spent time with EndNote, a referencing software and Nvivo a qualitative data analysis tool. As the journey ends, I must ask myself if it was worth it. On a professional basis the answer is yes. I was forced to question and reflect on my practice with my students, I discovered that the problems we face in our daily work are echoed throughout the literature and that we are all striving to achieve the same result, that is to discover an effective means to ensure that ICT is integrated and infused into primary education in a sustainable way. On a personal basis I enjoyed the journey, not only the journey through the literature but the physical journeys to Sheffield Hallam University. By getting away from one's own institution, meeting students from other parts of the world and hearing the views of other academics in the field, one gets an opportunity for improved professional development.

Chapter One

1.0 Introduction

The origin of this thesis lies in the professional interest of the author in using Information Communications Technology (ICT) as a teaching and learning tool in the primary classroom. As a lecturer in ICT in Primary Education at Mary Immaculate College, University of Limerick, Ireland, the author has a deep interest in how Newly Qualified Primary Teachers (NQPTs) are equipped to use and integrate ICT while in College and how they exploit this learning during the early years as classroom teachers. The author was also interested in any barriers that may exist for these NQPTs in their schools and in how the people they meet in their professional lives assist or hinder their use of ICT in the classroom.

1.1 Context

Like other countries, Information Communication Technology (ICT) has become a major concern in the Irish education system with the result that substantial expenditure has been invested in hardware, teacher training in the use of ICT, software and networking in all schools both primary and secondary. In 1997 the Department of Education and Science (DES) launched the *Schools IT2000 Policy Framework* (DES 1997). This initiative involved public expenditure of over €50 million over a three-year period with the promise of further funding in the following years. All schools were supplied with at least one multimedia PC and a dedicated internet phone line, with an hour a day free internet use. As part of the Schools IT2000 programme, the DES established the National Centre for Technology in Education (NCTE). The aims of the NCTE were clearly defined by the DES. These aims included teacher

training in the use of ICT, software evaluation, web design, multimedia production and networking. The training was offered under three specific initiatives:

- Technology Integration Initiative (TII)
- Teaching Skills Initiative (TSI)
- Schools Support Initiative (SSI)
 - ScoilNet (Dedicated website for schools and teachers)
 - School Integration Project (Various ICT projects in selected schools).

In-service programmes were presented during Summer Schools and in local education centres during the winter months. Attendance at these courses was voluntary and free of charge, however primary teachers attending the five-day Summer courses are given three days personal leave during the school term.

Listed under the heading ‘Objectives, Goals and Strategies’ of the Schools IT2000 document are the following regarding pre-service education primary;

- *The introduction of pre-service training in the use of ICTs in education for all student teachers* (p.3)
- *To support colleges and schools of education in developing the integration of ICTs in pre-service teacher training* (DES, 1997 p.19)

From the outset of this initiative, the Government wanted to ensure primary student teachers were prepared fully to integrate ICT into their teaching on graduation. The National Council for Curriculum and Assessment (NCCA), the statutory agency with responsibility for devising the National Curriculum for primary and secondary schools in Ireland, promotes the use of ICT in learning and teaching.

1.2 Participants and Setting

The participants for this research are thirteen NQPTs, competent and confident users of ICT. The data collection took place in their schools which are scattered throughout the country and range from large city schools to (two teacher) rural schools. It was important to have a cross section of school types in this study to illuminate the differences between the facilities and needs of the rural and urban teacher. Interviewing the participants in their own classrooms enabled the author to get a first hand glimpse of the real classroom and not a teaching practice setting where participants might feel under pressure to put on a performance. The author also hoped, through interviews and observations, to gather data and stories to pass on to his present and future cohorts of students on how these NQPTS are integrating ICT into their teaching. All the participants were personally known to the researcher as he had worked closely with them while they were undergraduates in the College.

While comparable work has been undertaken on NQPTs by Anderson (2006) in Swedish schools along with Wright & Wilson (2005), Friedman & Kajder (2006) in the United States and by Galanouli & McNair (2001) on initial teacher education in the United Kingdom, overall, there is very little empirical research on this specific topic. Their work and that of many others in the field will be discussed in Chapter Two.

1.3 Rationale

The literature from the DES and other Government bodies i.e. the NCTE and NCCA suggests that ICTs must have a central role in pre-service teacher education. However, to date, the DES has done very little in the way of providing extra resources or funding for initial teacher education primary with regard to ICT. To help alleviate

this issue, Mary Immaculate College initiated a laptop programme for B.Ed. students. Undergraduate and postgraduate students (education) are given the option of purchasing a laptop computer through a group scheme, with the facility of paying for the laptop on graduation. Courses on basic ICT skills, multimedia production, web design and teaching resources production are offered to these students on an ongoing basis throughout their time in College. These courses are voluntary and occur outside official class/lecture hours. All education students receive a basic training in ICT and some students undertake an elective on ICT during their final year in College. The ICT module grades achieved by the students using the laptop computers and taking the ICT elective in their final year suggests that they are fully ICT literate and prepared to integrate and infuse ICT into their teaching on graduation. Pelgrum (2001) in a study on obstacles to the integration of ICT in education suggests that teachers' lack of ICT knowledge is a major obstacle to technology integration. Similar findings are discussed by Baylor and Ritchie (2002) when discussing factors facilitating teacher skill, teacher morale and perceived student learning in technology using classrooms. If teacher competency, as suggested, is a major factor in technology integration and infusion then student teachers on the laptop scheme who have completed the ICT elective and voluntary training should be capable technology users in their own classrooms on graduation. My research is not simply seeking knowledge, but useable knowledge. Richey argues that educational research should be *responsive to the current or emerging needs of practitioners and ultimately to the solution of professional and social problems* (Richey 1998, p.7).

1.4 The Research Aims and Questions

The principal aim of this research study is to explore

- How newly qualified primary teachers (NQPT), competent and confident users of technology, integrate ICT into their teaching during their initial teaching career.

The researcher is assuming that these NQPTs are ICT competent and confident having completed the fifty-hour ICT elective module as undergraduates and having had access to personal technology by means of owning their own laptop while in college.

The study aims to further explore the following sub themes:

- How does the ethos of the school impact on newly qualified primary teachers, competent and confident users of technology, use of ICT in their classrooms during the early years of their teaching career?
- How has the laptop programme and pre-service ICT training at Mary Immaculate College, equipped the NQPTs to integrate and infuse ICT into their teaching?
- How has the use of technology, while at Mary Immaculate College contributed to the integration or lack of integration of ICT during their initial career?
- What are the perceived barriers to ICT use in their schools?

The findings of this study, while based on participants from one college, may be applicable to others in Ireland as all five initial teacher education colleges are similar in the methods they use to prepare primary teachers and on graduation all students will take up employment in similar schools throughout the country. The findings might inform the teaching staff at Colleges of Education regarding the ICT needs of their students and might also assist principal teachers, DES inspectors and ICT advisors working with NQPTs seeking to integrate and infuse ICT into their teaching.

1.5 Methodology and Methods

For the purposes of this study, the researcher adopted a qualitative approach in line with the thinking of Creswell who states that the goal of qualitative research *is to rely as much as possible on the participants' views of the situation being studied* (Creswell 2003, p. 8). A qualitative case study approach using qualitative methods for the collection of data was chosen. The study adopted an inductive process whereby the researcher gathered information, asked open ended questions, analysed the data to create themes and patterns and generated generalisations. Along with this non-positivist approach, the research could be described as constructivist, that is to say the researcher interpreted what he saw and heard and constructed or generated meaning from it. The study could also arguably be described as taking an advocacy approach in that the findings might, as discussed by Kemmis and Wilkinson cited in Creswell *contain an action agenda for reform that may change the lives of the participants* (Creswell 2003, p. 10). The researcher's own experience with the phenomenon under study should assist in creating what Stake (1994) calls *naturalistic generalizations* (p.240). This qualitative approach is appropriate for this study as the research took place in the natural setting, the data collection methods used were interactive and

humanistic and the approach allowed the phenomenon to be viewed holistically. The focus is on the participants' own perceptions and experiences. As the primary data collection instrument, the researcher's own beliefs were taken into account and this introspection or reflexivity acknowledged the biases, values and interests of the researcher.

1.6 Roadmap of the thesis

Chapter Two reviews the relevant literature regarding the history of ICT in the Irish education system, examines ICT at pre-service, nationally and internationally, briefly focuses on the general problems encountered by NQPTs in their early years as classroom teachers and looks at the barriers surrounding the integration of ICT in their schools and classrooms.

Chapter Three outlines and defends the qualitative methodology and research methods used in this study.

Chapter Four presents the data gathered during the interviews with the thirteen participants, classroom observations and unstructured discussions with some of the school principals. The chapter gives very little commentary on the data, however, it attempts to give an accurate account of the participants' own thoughts and reflections on their situation using the participants' own voices. The data is presented in the form of five themes. These five themes emerged following extensive analysis of the data. Chapters Five and Six review the findings, firstly based on the participants' own accounts and secondly in relation to the literature reviewed in Chapter Two.

Chapter Seven presents the conclusions, discusses trustworthiness and credibility along with some issues surrounding the limitations of the study. Finally, the study presents a set of six recommendations, posed as questions, as areas for further research.

Chapter Two: Literature Review

2.0 Introduction

The focus of the dissertation is how newly qualified primary teachers (NQPTs), competent and confident users of technology, use ICT in their classrooms during the early years of their initial teaching career and specifically the barriers, if any, that exist for these young teachers in integrating and infusing ICT into their early teaching career. The study also examines the use of laptop technology and ICT experience at initial teacher education for primary teachers. This chapter aims to review and critique the current literature relating to ICT and primary education both in Ireland and throughout the world. A detailed discussion on ICT and specific subject teaching in primary schools is beyond the scope of this study. The review is presented in three sections.

Section One firstly discusses the introduction of ICT into the Irish Primary School system by the Department of Education and Science (DES) Ireland since 1984 and its potential benefits. Included is a review of reports from the Department of Education and Science, Ireland, the National Policy Advisory and Development Committee (NPADC), along with reports from the National Council of Curriculum Assessment (NCCA) and the National Centre for Technology in Education (NCTE). Secondly, success and failure of ICT use in primary education is discussed.

Section Two of the literature review examines pre-service ICT education nationally (Ireland) and internationally, discusses some examples of laptop initiatives at pre- and post-service level and examines issues surrounding learning with and through technology.

Section Three of the review briefly focuses on the general problems encountered by NQPTs in their first post, the barriers in relation to ICT integration., the role of the school's and local ICT coordinator, the principal teacher and the school's ICT Policy. This section also looks at the role of professional development, with particular emphasis on ICT in-service, and gives an overall summary of the literature review.

2.1 Section One: Background to ICT in Irish Primary Education

The DES introduced a pilot ICT initiative into Irish primary schools in 1984. This pilot programme lasted thirteen years and was followed by the first national IT education policy named *Schools IT2000, A Policy Framework for the New Millenium*. This government policy was introduced in 1997. In 2001 the DES launched its second policy document, the *Blueprint for the Future of ICT in Irish Education Three Year Strategic Action Plan 2001-2003*. A third initiative was launched in 2004 giving a commitment of €18 million to provide broadband access for all schools. The most recent policy document '*Towards 2016, Ten- Year Framework Social Partnership Agreement 2006-2015*' proposes a further expenditure of €257 million on ICT in education by 2013.

The Department of Education and Science, (DES) Ireland, initiated a pilot project, *Computers in Education*, on ICT in primary schools in 1984. A total of thirty two schools, one percent of all primary schools in the country, were involved in the programme. Following this project, the Irish National Teachers Organisation (INTO), published a report suggesting that the DES pilot programme *succeeded in raising the profile of computing at primary level and showed there was a positive role for IT in the education of children at primary level* (INTO 1996, p. 3) and listed a number of

recommendations. However, concerns were expressed at the failure of the DES to implement the recommendations of the INTO 1996 report. Following on the launch of the European Commission's Action Plan, EU (2001), *Learning in the Information Society*, in 1996, the DES set about establishing an ICT programme for education in Ireland.

2.1.2 Schools IT2000

In 1997 the DES, Ireland published its first ICT policy document and programme known as *Schools IT2000, A Policy Framework for the New Millennium* DES (1997). This document outlined the plans for ICT use in primary and secondary education up to the year 2001. The Government proposed to spend €50 million with additional funding from private corporations over three years on providing all schools with at least one multimedia computer and internet connection. Funding was set aside for the training of teachers in the use of the new technology. The DES established the National Centre for Technology in Education (NCTE) with the aim of organizing training programmes through the network of Education Centres throughout Ireland, with further courses in schools and third level colleges. The courses on offer included basic skills, (Phase One and Two) basic skills, ICT and Curriculum Integration for primary schools, Maths in second level schools, basic web design, multimedia using Hyperstudio, troubleshooting and ICT and classroom management. By the end of 2000, Mulkeen (2003) states, 84% of primary teachers had attended at least one of these courses. Other initiatives put in place by the NCTE included School Integration Projects (SIPs). This scheme, according to Mulkeen, involved 248 schools in 48 national and international projects, ranging from software use in subject areas to internet and e-mail programmes, Galvin (2002) outlined the successes and failures of these SIP projects and addressed the issues of technical support, ICT integration in the

classroom and the need for further research in this area. Two web sites were put in place to assist schools and teachers in integrating ICT, www.scoilnet.ie and www.ncte.ie.

2.1.3 First National Evaluation

In 1999, the National Policy Advisory and Development Committee (NPADC) undertook the first major national study on the impact of the Schools IT2000 programme. The findings of the NPADC survey relating to ICT and primary education are presented in this dissertation.

2.1.4 Infrastructure

On infrastructure, the report noted an average of 15 computers per primary school, a pupil-to-computer ratio of 19.6:1 and that over 79% of primary pupils had access to the internet. All of these figures showed an increase from a previous study completed in 1998 by Telecom Eireann, the national communications company. In relation to ICT and software use, the NPADC report stated that 83% of primary principals and 67% of primary teachers were using ICT on a regular basis (Cotter 2001). The software packages most commonly used by primary teachers and principals were age appropriate word processors along with reference software, problem solving and educational games.

2.1.5 Training

Cotter (2001) shows that 75% of primary teachers and 88% of primary principals have undertaken training in ICT since the launch of IT2000. The NCTE Phase One and Two courses were successful in familiarizing teachers with the technology, with

the majority of teachers opting for training within their own school. Overall, while teachers welcomed the IT2000 initiative, fundamental issues emerged from the report:

- The need for more training;
- The need for more funding for equipment;
- The need for more technical support.

In its closing recommendations, the National Policy Advisory and Development Committee (NPADC) highlighted many issues but specifically the need for training in the pedagogical uses of ICT in the classroom and the promotion of postgraduate research in the use of ICT. The NPADC report paid particular attention to the area of pre-service teacher education by suggesting that the DES *must provide appropriate and dedicated funding for ICT at pre-service* (Cotter 2001, p.11).

2.1.6 Stage Two of Government ICT Initiative

In 2001 the DES launched the second initiative on ICT for Education. This replaced the IT2000 programme and was published as the *Blueprint for the Future of ICT in Irish Education, Three Year Strategic Action Plan 2001-2003*. In this plan the DES promised a further €107.92 million towards capital expenditure and support services including teacher training. This initiative highlighted specifically the role of the principal and the Education Centres in promoting ICT in schools and the provision of Broadband access for all schools DES (2001). Following the publication of the Blueprint strategy, the DES announced, in February 2004, a further investment of €18 million providing Broadband connectivity to all primary and secondary schools in Ireland. This is a joint venture between the private and public sector.

The agreement involves a voluntary commitment of €15 million over a three year period by the telecommunications sector as represented by IBEC's Telecommunications and Internet Federation (TIF). This will be augmented by

a Government contribution of €3 million. (DES Press release, 24th February 2004)

It is, however, significant to note that ICT and pre-service education was not mentioned in this three year strategic action plan.

2.1.7 Evaluation Two 1998-2002

A progress report on ICT in Irish schools was published in 2004. This report outlined the work of ICT in primary, post-primary and special schools since the introduction of the IT2000 initiative in 1997 and the follow on Blueprint for ICT in Irish Schools in 2001. Overall the report showed an increase in the number of computers and peripherals in all sectors but in particular the primary sector. According to Mulkeen (2004), the ratio of computers per pupil in primary schools had fallen from 19.6:1 to 12:1. The most recent figures published by the NCTE show a ratio of 9.06:1 in Irish primary schools (Shiel and Flaherty 2006). This figure places Ireland above the EU average of 9.3:1 computers per child in the education system. On ICT training and skill development, the Mulkeen (2004) report highlights an increase in primary teachers use with up to 80% of teachers reporting ICT usage at work. Further courses in ICT curriculum use (64.5%), digital media (75%) and basic troubleshooting (64%) were requested by primary teachers (Mulkeen 2004). This shows that teachers had moved on from basic skills to more curriculum based usage in their schools. Table 1 below shows the usage of ICT in subject areas in the primary school. Primary teachers use ICT mostly in the core subjects of the curriculum and in learning support.

Usage of ICT in subject areas in Irish primary schools

	% using ICT in this subject occasionally or more 2002	% using ICT in school monthly or more 2002
English	98	78
Learning support/remedial	90	72
Mathematics	97	66
Geography	96	48
ICT skills classes	92	46
Extra curricular projects	85	44
History	94	43
Science	86	35
SESE	68	22
Arts Education	71	20
Gaeilge	61	18
SPHE	54	10
Religion	39	6
Modern Languages	18	5
Physical Education	13	2

Mulkeen (2004)

Eurostat is a European statistical agency that surveys all European countries at the same time and using the same instruments. Figures taken from Eurobarometer Flash 118 (2002) and European Youth into the Digital Age, a report based on Eurobarometer Flash 101 and 102 (2001).

Fig 1.

Other major issues discussed in the report are lack of ICT maintenance, need for more and updated equipment i.e. computers, peripherals, access to the internet, placement of computers in schools and further training on ICT and curriculum specific subject content plus the need for more digital resources produced specifically for the Irish school system. While the initial IT2000 policy of 1997, the NPADC report of 2001 and the report on preparing primary teachers for the 21st century (DES 2002), highlighted the need for further investment in ICT and pre-service teacher education, no mention of this topic was discussed in this progress report or the Blueprint document of 2001. Further evidence of this lack of interest in ICT at pre-service and newly qualified teacher level is highlighted in the most recent report of the inspectorate on *Beginning to Teach*, where ICT receives a mere three mentions in an eighty four page report (DES 2005).

2.1.8 ICT and the Irish Curriculum: National Council for Curriculum and Assessment and ICT

The National Council for Curriculum and Assessment's (NCCA) role in curriculum and assessment is clearly outlined within the Education Act (1998), which states that the NCCA shall advise the Minister on matters relating to

- *The curriculum for early childhood education, primary and post-primary schools, and*
- *The assessment procedures employed in schools and examinations on subjects which are part of the curriculum* (Section 41, Subsection 1) (NCCA 2004, p. 3)

While the NCCA advises the Minister for Education and Science on matters relating to Curriculum and Assessment, it should be noted that ICT does not form part of the curriculum in the Irish Education system. So how and why does the NCCA get involved in matters relating to ICT and schools? Following the launch of the IT2000 initiative in 1997, the NCCA formed a working group to examine the issues surrounding the introduction of ICT into schools. The working group recommended that the NCCA produce a set of guidelines for teachers and establish a steering committee with responsibility for ICT policy and provision in schools. The steering group proposed that the NCCA's work should be based on the following principles

- *ICT should be used actively by learners from junior infants onwards;*
- *all learners should use ICT in relevant curriculum contexts;*
- *by the end of compulsory education all students should have achieved a defined; level of ICT competence.*

(NCCA 2004, p.4).

In February 2004, the NCCA published and disseminated *Information and Communications Technology in the Primary Curriculum: Guidelines for Teachers*, to all primary schools in Ireland. These guidelines provided exemplars for the use of ICT in all subject areas and all class levels (see www.ncca.ie).

The NCCA proposes this vision for ICT Literacy for the 21st Century for the Irish Education system.

All students will leave school as capable independent learners, able to use ICT confidently, creatively and productively, able to communicate effectively, able to work collaboratively, and to critically evaluate, manage and use information (NCCA 2004, p.29).

In order to achieve this vision of ICT Literacy in the Irish Education System for the 21st Century the NCCA incorporates the following principles:

- *All students should have equity in terms of access and use of ICT;*
- *Decisions on the use of ICT in school should be based on and integrated with the general aims of education at the appropriate level;*
- *Teacher professional development in ICT pedagogy is a fundamental requirement;*
- *The integration of ICT to improve students learning and to prepare them for lifelong learning, should be an integral part of every school's plan;*
- *All teachers and students should have access to appropriate ICT infrastructure, bandwidth and resources and online content to support the Irish curriculum (NCCA 2004, p.29).*

2.1.9 Summary

This section of the review outlined the Government and Government Agencies actions, reports, evaluations and proposals on the use of ICT in Primary Education in Ireland. All documents agree that many improvements have taken place since the introduction of ICT in 1997. However, reports and evaluations suggest the need for further expenditure on ICT infrastructure, maintenance, equipment, teacher training in curriculum integration, more use of the internet in classrooms and development of localized software. The NCCA has outlined its vision for ICT literacy in the 21st Century and has provided a set of guidelines and principles to encourage the implementation of this vision. Surprisingly, emphasis on ICT at pre-service and at newly qualified teachers' stage seems to have diminished since the publication of the first ICT Policy Document, IT2000. In closing this section on the Irish Government's

initiatives regarding ICT in education it is interesting to note that the most recent government policy document, *'Towards 2016, Ten- Year Framework Social Partnership Agreement 2006-2015'* under the section dealing with education and training and specific short-term commitments the document had this to say: *'all children will have the opportunity to become ICT literate by completion of second level school'* (Ireland 2006, p. 31). A further investment of €257 million on ICT and education is promised under this policy by 2013.

2.1.10 Investment in ICT

In its annual report for 2004, the National Centre for Technology in Education, Ireland (NCTE) shows an expenditure of €7,510,755 on promoting ICT usage in Irish primary and secondary schools. This, along with the millions of Euro already invested in ICT in education in Ireland since 1997, should show some improvement in ICT integration and in overall standards in schools. By 1999, spending on ICT in Education (excluding third level) within the US had reached \$5.5 billion (Cuban 2001), while countries within the Organisation for Economic Cooperation and Development (OECD) invested \$16 billion in ICT in education in the same year (OECD 2001a). Between 1998 and 2002, the UK Government invested £900 million in the National Grid for Learning, (Reynolds *et al.* 2003), while the Scottish Executive allocated £38 million for ICT in education during the same period (Scottish Executive 2002). This massive allocation of funds begs the question that Cuban posed *'Has the investment in computers and other technologies been worth the cost?'* (Cuban 2001, p.19).

2.1.11 Success or failure of ICT in schools

A great deal of the literature on ICT in primary education talks optimistic rhetoric, the hopes and the reality, what makes the difference, attainment at primary level and children's use of ICT. Selwyn suggests that *'much educational research continues to take the form of small/ medium scale surveys and case studies'* (Selwyn 2000, p.94) of ICT schools perceived to be successful and examines the reasons why this is the case. Roberston argues that most of this positive rhetoric is driven by commercial interests and cites the findings of the Apple Classrooms of Tomorrow (ACOT) as a prime example of this propaganda.

Thus, after 2 years of total and unlimited access to technology by carefully selected students whose parents had chosen the program and whose teachers enjoyed unlimited amounts of technical and instructional support, small class sizes, and half of each day to devote to preparation, the best that Apple could say about the achievement scores of ACOT students was that they had not declined. (Roberston 2003, p. 281)

Larry Cuban, a long time skeptic of ICT in education, in a forward to a book on the ACOT project by Sandholtz declared that *no skeptic can ignore the solid evidence that the authors provide of deep lasting changes in teaching practices* (Sandholtz et al. 1997, p. xiv).

However, while acknowledging pockets of successful integration at primary level researchers differ whether ICT is actually changing teaching and learning styles across all schools. In a study on computer availability, Rosen and Weil (1995) argued that although computers were available in the schools only half of the teachers used them. Tearle draws the following conclusion from a single case study of a school where ICT is regularly used for teaching and learning, *'there were few signs of radical alteration to existing structures and working practices, or even evidence of particularly innovative application of ICT to enhance and extend learning opportunities'* (Tearle 2003, p.579). Reynolds et al. call for further *'examination of*

exactly how ICT can improve education' (Reynolds *et al.* 2003, p. 167), while Roberston suggests that by the end of the 20th Century *'ICT remained a marginal force'* (Roberston 2002, p. 404). A study of 267 primary school children in Wales by Selwyn and Bullon revealed that while *'the majority of children are making some use of ICT, patterns of sustained and varied engagement are rare'* (Selwyn and Bullon 2000, p. 321). They also called for teachers to construct meaningful learning opportunities for children when using ICT. Conlon and Simpson when comparing Cuban's Silicon Valley with Scotland's Silicon Glen suggest that like Silicon Valley, in Scotland *'schools have been rewired but schooling has not been significantly transformed'* (Conlon and Simpson 2003, p.149). A study undertaken in five European countries of twenty five technology rich primary and secondary schools by Smeets and Mooij argue that *'much needs to be done to promote pupil-centred uses of ICT in education'* (Smeets and Mooij 2001, p. 416). They recommend that for ICT to be effective in the classroom teachers must adapt the learning environment for all the pupils. A report of the Second Information Technology in Education Study (SITES) in England, by Harris, provides evidence from teachers that *'the outcomes justified the effort and were positive about sustaining the initiatives in which they had been involved'* (Harris 2002 p. 457). Cooper and Brna in a report on the NIMIS (*Networked Interactive Media in Schools*) project, agree that carefully planned ICT programmes in schools lead to *'long lasting engagement and learning'* (Cooper and Brna 2002, p.134). In a review of the literature on successful implementation of ICT in schools, (Scrimshaw 2004) proposes that success depends on both school and external based strategies. Regarding school based strategies, the literature suggests that leadership, planning, whole school approach, professional development and reliable technical support are paramount to successful ICT implementation. On the external based

successful strategies he cites, schools working closely with the local community, local schools linking together, local in-service with the teachers involved in the design of the courses, participation in national ICT initiatives and peer support within the school, as necessary elements for successful ICT implementation.

Schofield, in a two year study of Whitmore High School in the USA, suggests *‘that the view that computers will suddenly revolutionize education is most likely mistaken’* (Schofield 1995, p. 228). Rosen and Wiel (1995) illuminated the fact that although computers were available in nearly every school, only half of the teachers used computers. McCurry questions the expenditure on and the value of ICT in the classroom by suggesting that *‘some teachers are already reporting student fatigue and lack of interest with technology related assignments’* (McCurry 2003 p.420). Vanesky (2004) provides examples of successful ICT implementation in the classroom from an OECD study of twenty three countries and their implementation of ICT. Even though all the schools in the study were ICT rich in infrastructure and software, Vanesky highlights the fact that ICT was not a catalyst for change or innovation in any of the ninety four settings in the study. *(This researcher was a member of the OECD research team in Ireland. All the schools in the Irish study were fully equipped with modern ICT infrastructures and had competent teachers on site).* In a study of teachers’ use of ICT to promote powerful learning environments, Smeets discovered that *‘most teachers do not make use of the potential of ICT to contribute to the power of learning environments’* (Smeets 2005, p. 353). He did, however, suggest that teachers who did use it were more confident in their ICT skills and had access to a large number of computers.

Finally, the BECTA report of 2005 on the *Evidence of Progress on ICT in Education*, states that '*Overall, the evidence suggests we have an ICT system which is not yet capable of facilitating a fully networked learning community which adds value for learners*'(BECTA(c) , 2005 p.43).

In summary, the evidence suggests that ICT is gaining momentum in a limited way, the ratio of computers to children is improving, numerous success cases are reported, interactive whiteboards, (Smith *et al.* 2005 and Clover *et al.* 2005), are making inroads into schools with encouraging results. Nichol & Watson propose that the IMPACT2 evaluation of the NGfL '*does not give grounds for optimism*' (Nichol & Watson 2003, p. 136). According to (Loveless 2003; Sime and Priestly 2005 and Barton & Haydn 2006), there is no compelling evidence in the current literature to suggest that ICT is gaining a strong foothold in most primary classrooms throughout the world.

2.2 Section Two

Section Two of the literature review investigates pre-service ICT education nationally (Ireland) and internationally, highlights some examples of laptop initiatives at pre and post -service level and examines learning with and through technology.

2.2.1 Pre-service Ireland

In Ireland, ICT at pre-service level is not centralised and does not follow a programme prescribed by the DES. Colleges of Education vary in both the quantity and quality of courses offered. In Mary Immaculate College in Limerick, all second year students take a twelve-hour module on ICT. This programme does not allow time for full basic skills training. Instead the programme tries to show by positive exemplars how ICT can be integrated into teaching and learning. The students use and evaluate software and www education sites based on criteria published by the National Centre for Technology in Education, NCTE. All students must produce a multimedia presentation for use during classroom experience. A similar module has been tried and tested with much success by Dore & Wickens (2004) in the UK. Wild (1995) and Fisher (2000) advocate this approach with trainee teachers. Fisher promotes the notion that *'moving away from using introductory technology courses with lots of skills...to multiple infused experiences using the tools for application'* (Fisher 2000, p.119) will have a much longer lasting effect on the students. A number of year three, final year students at Mary Immaculate College undertake an elective on ICT. This fifty-two hour module gives the students the opportunity to study all aspects of ICT in education. During this elective the students produce www sites and multimedia presentations, publish material using desktop publishing, use spreadsheets as an aid to classroom management, design simple computer programmes using

LOGO (computer based language for children), use digital cameras, scanners and prepare a major lesson plan to show ICT integration and infusion in the classroom. While there is no official programme, students follow the programmes devised by the NCTE for practicing teachers. The latest programme approved by the DES and NCTE is the *Intel Teach to the Future Programme*. By following these programmes the researcher tries to ensure that all students taking the ICT elective are competent and confident users of ICT. In order to alleviate the problem of basic skills training, Mary Immaculate College offers a voluntary laptop programme. Students opting for this scheme receive basic skills training in all aspects of ICT thus assisting the students when they graduate to year two and participate in the compulsory ICT module.

The DES 2002 report, *Preparing Teachers for the 21st Century, Report of the Working Group on Primary Pre-service Teacher Education*, acknowledged and praised the work undertaken at Mary Immaculate College. However, it recommended that further modules needed to be introduced '*for all first year students*' (DES 2002, p. 144). McCarthy, in a study of newly qualified teachers who graduated from Mary Immaculate College 1999-2001, stated the young teachers were competent in ICT skills and integration but were '*hampered by organizational and management issues*' (McCarthy 2004, p. 50).

2.2.2 ICT Pre-service: International Perspective

In 1999 Moursund undertook a national survey of ICT in teacher education in the US.

The analysis of the survey data indicated that

- *Most teacher preparation programmes do not have a written, funded, regularly updated technology plan;*
- *Most institutions report that ICT is available in the classrooms where student teachers get their field experiences, however most students do not routinely use technology during this field experience;*
- *The number of hours of IT instruction integrated into other course has a moderate correlation with other scores on the survey; however the number of hours of formal ICT instruction does not* (Moursund 1999, p. 2).

The study recommends that ICT instruction should be integrated into other courses and not just in stand alone ICT courses, institutions should focus on ICT integration and student teachers must get more opportunity to apply their ICT training during field work. Following the publication of this survey, policy makers in the United States became aware of the growing crisis in teacher education regarding ICT. This led to what Davis called the '*largest initiative in the world to develop ICT in Teacher Education, which started in 1999. It was called the 'PT3: Preparing Tomorrow's Teachers to Use Technology'*', (Davis 2003, p.63). Thompson (1999) cites three basic principles for ICT in teacher education, namely

- *ICT should be infused into the entire teacher education programme;*
- *Technology should be introduced in context;*
- *Students should experience an innovative, technology supported learning environment.*

These basic principles are very similar if not exactly the same as those proposed by Moursund above. Kay & Knaack agree that technology has penetrated into all schools with a significant improvement in the ratio of computers to children along with broadband access in US and European schools, but that pre-service teachers are '*perceived as unprepared to use technology*' (Kay & Knaack 2005, p. 392). Kay

outlines the following ten strategies used to teach ICT to pre-service teachers (Kay 2006, pp. 387-390).

1. The Integrated Model: This model attempts to incorporate ICT across all aspects of initial teacher education. (Pope *et al.* 2002 and Sahin 2003) have commented that success with this model has been reported, with students gaining increased confidence and improving basic ICT skills. Critics of this model such as Brush *et al.* (2003) cite the lack of appropriate equipment in colleges, the lack of interest and knowledge by staff and transferability of skills as hindering NQPTs when they begin teaching.

2. Multimedia Model: Student teachers prepare a portfolio of work highlighting their skills on various ICT programmes. Case studies of classroom practice are viewed on video and discussed while some online work is also completed.

3. Education Faculty: Some colleges have tried to get faculty on board with onsite training and ensuring ICT is modeled by all. Mullen and Angeli argue that student teachers will only use technology effectively in practice when education faculty infuse ICT '*throughout the teacher education curriculum*' (Mullen and Angeli 2001, p. 395).

4. Single Course: Mary Immaculate College utilizes this model in that all second year students participate in a single module on ICT. This model tries to incorporate all aspects of ICT training in one term. They are basic skills training, software and www sites evaluation, and producing multimedia resources on various topics to be taught during the final year field experience. This approach has been suggested by (Taylor

2003; Dore & Wickens 2004). Luan *et al.* (2006) had limited success with a similar discrete ICT programme with pre-service teachers in Malaysia. Hargrave & Hsu (2000) argue that this model, while improving self efficacy and giving a general overview of ICT in education, may not lead to successful use of ICT in the classroom.

5. Modelling: The main difficulty with this strategy, according to Barton & Haydn (2006), is that the faculty is unable to provide sufficient models for the students and that student teachers lack the opportunity to put their modeling experience into practice in their own fieldwork. Ertmer *et al.* have piloted an electronic modeling programme with education students. Sixty-nine students participated in this study, where models of six exemplary technology-using teachers were presented on CD-ROM format.

'Results suggest that electronic models can significantly increase pre-service teachers' ideas about and self-efficacy for technology integration. Furthermore, students found the examples of teachers included on the CD-ROM to be both realistic and relevant .
(Ertmer *et al.* 2006, p.1)

6. Collaboration: This takes the form of placing student teachers in local ICT active schools. The students and teachers work together in identifying ways to integrate technology. Carroll *et al.* (2003) discuss issues surrounding the commitment of the participating schools and teachers in this strategy. They argue that if one participant is lacking in commitment then the entire programme will suffer.

7. Field Base: This strategy has the backing of the International Society for Technology in Education Society (ISTENECATE 2004) and encourages students to produce and present their own lessons using ICT during teaching practice. Galanouli & McNair list three major issues with this form of pre-service training in ICT, they

are *'teachers' attitudes, lack of resources and time'* (Galanouli & McNair 2001, p. 404). This strategy gives classroom experience but according to Brush *et al.* (2003), the strategy may reduce the amount of time students have to develop their personal ICT skills. However, Marcovitz (1999), Sherwood (1999) and Asan (2002) found that student teachers did have a positive effect on their host teachers during teaching practice.

8. Workshops: A number of colleges use the short workshop model. During this type of programme various strategies are employed e.g. case study, multimedia and creating digital portfolios. This type of strategy is often used at in-service level in Ireland during the week long summer schools organized by the DES for practicing teachers. Collier *et al.* (2004) highlight the advantage of this model in that it saves time but it may sacrifice the personal skills element of the pre-service teachers.

9. Access: This strategy provides pre-service teachers with personal laptops. Mary Immaculate College has a voluntary laptop programme in place since 1998. The advantage of this strategy is that it gives the students time to get familiar with the technology. While acknowledging that personal access to technology is vital, Kay and Knaack suggest that *'research on use of laptops in pre-service education is limited'* (Kay and Knaack 2005, p.396) and further investigation is needed. Kay (2006) further suggests that laptops need to be used in conjunction with a number of the strategies listed above.

10. Mentor Teachers: The final strategy is mentoring. The idea here is that both student and teacher learn from each other, the teacher with classroom experience and

the student with computer skills. This model would seem to be more appropriate for NQPTs and their mentor in their first post. The time factor and matching a student to an appropriate mentor would take an amount of organization and management and is not possible with a large student population. A novel experiment in mentoring was tested by Hweitt *et al.* where student teachers mentored pupils in a school via tele-mentoring. The results showed that the student teachers reverted to direct the pupils *'rather than help manage the research themselves'* (Hweitt *et al.* 2002, p.19).

Strudler & Wetzell (1999), Moursund (1999), Yelland *et al.* (2000) and Hammon and Mumtaz (2001) suggest that all these strategies have positive and negative aspects but the most successful colleges use a combination of all models. Mehlinger and Powers argue that teacher education programmes *'might combine two or more of the approaches'* (Mehlinger & Powers 2002, p.106) and suggest that teacher educators adopt the framework proposed by the National Educational Technology Standards (NETS), (see ISTE 2000). A recent study on ICT at pre-service level, by Friedman and Kajder validates this view by suggesting that *'pre-service teachers should have multiple opportunities within their teacher education programmes'* (Friedman & Kajder 2006, p.150). An interesting and novel approach to ICT pre-service was tested by Angeli and Valanides. This model was based on the work of Schulman (1986) and is described as Pedagogical Content Knowledge (PCK). This PCK model has four components, namely, *'pedagogy, subject matter content, student characteristics and the environmental context of learning'* (Angeli & Valanides 2005, p.293). The authors argued that pre-service teachers should be taught all components simultaneously. By using a blend of multimedia software and software that encouraged a constructivist interactive approach, ModellingSpace, the students

working through this model ‘exhibited *a statistically greater technology competency*’ (Angeli & Valanides 2005, p.300). The authors acknowledge that further work needs to be undertaken with this model in future years.

2.2.3 Further examples of initial ICT training

2.2.3.1 Australia

Following the publication of ‘*Teachers for the 21st Century-making the difference*’ by the Department of Education, Science and Training, Australia (2000), guidelines were established for the personal skills and classroom practices required in ICT. The University of Tasmania prepared one example of an initial teacher ICT module. This model is typical of many initial teacher education courses throughout Australia. The course has three strands,

1. Personal & Professional Strand;
2. Teaching and Learning Strand;
3. Management and Organisational Strand.

The first strand has six compulsory modules, introduction to computing, word processing, the Internet, e-mail, multimedia and web publishing. The second strand on teaching and learning with technology is compulsory for all final year students and the strand on management is optional in third year. This programme is also offered as an in-service programme in Australia and Pearson recommends that ‘*Pre-service teachers are expected to graduate from college with the same competencies that working teachers gain through in-service*’ (Pearson 2003, p.45). While much has been achieved in providing student teachers with the basic skills, the Department of Education Science and Training in Australia (DES&T 2000) indicated that new initiatives should be taken to enhance teacher professional standards in the application of ICT in teaching and learning activities in schools. Downes suggests that an

‘infusion approach in teacher education is more likely to lead beginning teachers to adopt ICT to support student learning activities in schools’ (Downes 1995, p.34).

2.2.3.2 Finland

In 1999, the Ministry of Education Finland (MOEF 1999) updated its original strategy and published its Information Strategy for Education and Research 2002-2004. This updated strategy consists of ten national projects. The project dealing with teacher education pre-service and in-service is called OPE.fi. All teacher education departments in Finland submitted their own strategic plans for ICT and organised more pedagogical support for their students based on the OPE.fi levels of competency. These competencies are described by Niemi as

- *Every teacher can use computers and other ICT facilities and has knowledge of the principles to use them in teaching and learning;*
- *At least half of the teachers, in addition to basic skills have more advanced ICT competencies, such as implementing email, the WWW and ICT based platforms for group work etc.;*
- *Ten percent of teachers to have special competencies in ICT such as content specific or profession specific applications etc.*

(Niemi 2003, p.88).

While the aims and objectives of the Finnish Ministry of Education are very similar to the US and Australia the mode of delivery is different. A special portal has been put in place, containing all aspects of the ICT training strategy using a *WebCT* learning environment. Student teachers undertake this programme online and have short one to two day intensive face-to-face workshops. Luukkainen suggests that ICT is not a separate subject and teachers must view ICT as

- *a tool to create something new;*
- *more as a platform for networking and sharing ideas;*
- *capable of being integrated into the curriculum (Luukkainen 2000, p.100).*

The Ministry of Education, Finland, stresses that teachers’ ICT competencies are a key issue in a learning society.

2.2.3.3 Turkey

Baki highlights some of the problems regarding ICT and teacher education in Turkey in his work on integrating ICT and Mathematics. He suggests that pre-service education in Turkey is highly centralised and computer courses taken by student teachers *were frequently taught by technology specialists and rarely focussed on the use of computer assisted learning software in an instructional setting* (Baki 2000, p. 344). To overcome this problem Baki, during 1995, devised a programme to allow student teachers have experience of using instructional software while at college and later use this experience in classroom practice. His findings suggested that students who had sufficient skills did try and integrate ICT into their teaching while students without basic skills spent more time on hardware and software technical issues. He concludes his work by recognising that ICT and teacher pre-service education in Turkey needs further research and that education faculties in Turkey need further professional development.

2.2.3.4 The United Kingdom

In the UK a specific curriculum, (DfEE 1998), is laid down for the providers of ICT in Initial Teacher Training (ITT). This curriculum followed on from the InTent Project undertaken between 1989 and 1992 in five different types of teacher education providers. Somekh and Davis recommend that all NQTs must show they '*have the knowledge, understanding and skills to use ICT effectively in teaching*' (Somekh & Davis 1997, p.1) before being granted qualified teacher status. The curriculum outlines nineteen ICT objectives that trainee teachers must demonstrate in both knowledge and practice. Trend *et al.* promote seven 'ICT Rules' for student teachers.

It is interesting to note that they encourage the students to '*focus on children's learning rather than on the complexity of the ICT*' (Trend *et al.* 1999, p.10). Students in colleges in Ireland do not have this pressure as they have a very short module and only need to prepare a multimedia lesson resource as part of their module assignment. The BECTAa (2003) review of the literature on ICT in ITT found that students can benefit by using technology to avoid feelings of isolation during field practice, using video conferencing for observation and having electronic links with their supervisor. An example of this pre-service model is described by Chatterton (2004) where students used the FirstClass platform to solve common problems during field experience. Cuckle & Clarke (2003) advise putting students with appropriate mentors and ICT rich schools during their practice. BECTAa (2003) recommends the following for teacher educators:

- improved communication between staff and students;
- enhanced peer support;
- extend links between campus and classroom;
- teacher educators showcase ICT in their own teaching methods;
- use ICT to provide communication links between students on teaching practice;
- reduce computer-related anxieties by the provision of appropriate training.

Following the introduction of an ICT curriculum for ITT by the DfEE (1998) and much research on ICT at pre-service in the UK one might expect trainee teachers to be better prepared to integrate ICT on graduating. Surprisingly, the findings from the Teacher Training Agency (TTA 2005) survey on NQTs in the UK, show that 43% of NQTs do not feel adequately prepared to work with ICT in their first year of teaching.

Further examples of ICT initiatives worldwide at pre-service are discussed in *Information and Communication Technologies in Teacher Education: A Planning Guide*, published by UNESCO (2002).

2.2.3.5 Brief Summary

Tarleton (2001) and White (1999) caution that teacher educators must prepare teachers to integrate ICT into the curriculum. The literature suggests that an integrated model is the most appropriate way to achieve this. This integrated model uses a blend of basic skills training, field experience, mentoring, resource production, students having personal access to technology, ICT rich practice schools, supportive supervisors and ICT role model teachers during placement. Along with the items listed above, Grove *et al.* (2004) call for a faculty interested and skilled in using and infusing ICT during initial teacher training. A dose of reality is advised by Pierson and Cozart when they suggest that

Perhaps teacher preparation programs are painting too optimistic a picture of technology's role in the classroom and subsequently, teacher educators should infuse a dose of reality into the preparation of new teachers
(Pierson & Cozart 2005, p.61).

2.2.4 Laptop Programmes

As the focus of this study are NQPTs who had access to laptops while at College it seems appropriate to review some laptop and mobile computer programmes in Education. Brown (2002) lists one hundred and forty institutions across the world having laptop programmes or embarking on establishing mobile programmes. Gardner (1993), Web *et al.* (1995), Philips *et al.* (1999), Harrison (1998), Hennesy (1998) and Ansorge *et al.* (2001) have published on laptop schemes where teachers were either given a loan of a laptop or purchased laptops through a group scheme funded by the government. The British Educational Communications and Technology Agency BECTAb (2003) published its findings regarding portable ICT devices in teaching learning suggesting that the use of portable PCs

benefits teachers gain in ICT literacy skills, confidence and enthusiasm are useful for planning and preparation of lessons and designing materials, have greater ability and confidence to support student learning with ICT, increased quality of management information and project work and enhancement of professional image projected to colleagues (BECTAb 2003, p.2)

This BECTA report goes on to discuss the implications for teaching from the widespread use of portable ICT suggesting that having access to laptop technology can help *‘increase both collaborative learning and communication, and independent learning amongst students’* (p.3). The evidence also suggests that better integration of ICT occurs in the classroom affecting both teaching style and classroom organisation, including the use of peer tutoring. An Australian study by Newhouse suggests that *‘portable computers are best suited to a curriculum which is more learner-centred’* (Newhouse 2001, p. 219). Philips *et al.* highlighted that the *‘greatest strength of the laptop project was in developing the personal ICT skills of the participating teachers’* (Philips *et al.* 1999, p.159). Handler (1993) is of the opinion that laptop programmes are best suited to in-service and not pre-service owing to the amount of time needed to train the students. The experience at Mary Immaculate College suggests that the students learned the basic skills without much difficulty. Many of the laptop students used their laptops with much success on teaching practice to gather resources from the www and present various lessons using the laptop and LCD projectors. Results from a pre-service laptop programme in Ontario, Canada by Vail *et al.* (2004), argues that students having access to laptops at pre-service level did not experience any significant effect on their teaching during their first year in the field. The young teachers were hampered by the lack of facilities in their schools. However, the findings did show that the young teachers did have a positive attitude towards technology and used it for lesson preparation and resource production. Findings from a case study at Winona State University on *Laptops for All* by Mc Vay *et al.* suggest

that *'WSU is doing the "right thing" for its students'* (Mc Vay *et al.* 2005, p. 523). However the study points out that many challenges lay ahead, in particular getting faculty to accept the technology, *simply requiring students to lease laptops without smoothing the way for faculty members to integrate the technology into their courses is a recipe for disaster* (p.521). Parallel findings of laptop use by students and faculty are found in Demb *et al.* (2004). While much of the literature on laptop technology in education is positive it is interesting to note that a study by Windschitl and Sahl on tracing teachers' use of technology in a laptop computer school the findings suggest that

- *The influence of ubiquitous technology on instructional decisions was mediated in substantial ways by teachers' interconnected belief systems about learners in that particular school;*
 - *The condition of pervasive portable technology did not initiate teachers' movement toward constructivist instruction;*
 - *The need for regular planning time with a colleague who shares both an interest in technology and a desire to advance in pedagogy.*
- (Windschitl & Sahl 2001 p. 202)

The second finding above, in particular goes against the majority of the findings regarding technology and constructivist pedagogy of (BECTAb 2003; Jonassen *et al.* 1999; Sandholtz *et al.* 1997 and McFarlane 1997).

2.2.5 Learning With and Through Technology

The traditional views of learning were based on learning being a process of information transfer and reception, that learning is individual, learning is linear and that learning is facilitated by breaking down the content to manageable piece. Based on the work of Vygotsky (1978), Piaget (2001), Bruner (1973), and Gardner (1993a), modern approaches propose that learning is a natural and social process, that it is active, linear or non linear, is integrated and contextualized, is based on the strengths

of the student and uses real problem solving activities. Further learning approaches used are: Problem Based Learning (PBL) to develop higher order thinking skills; Anchored Instruction, discussed by Bransford and Stein (1993), relating to problems anchored in the real world; Distributed Cognition, highlighted by Oshima *et al.* (1995), proposes dialogue and developing shared understandings; Winn (1993) cites Situated Learning as emphasizing coaching and collaboration while Hsiao (1999) describes Self-Regulated Learning as where learners are encouraged to become reflective thinkers of their own learning.

A constructivist approach is suggested as being appropriate when using technology in education. Jonassen *et al.* (1999) believe that technology should be viewed as a learning tool that students learn with and not from. Jonassen promotes a constructivist approach to learning with technology. Ravitz *et al.* (2000) understand the constructivist approach as one where the learners construct their own understanding by building on previous experience. Sandholtz *et al.* (1997) report on the fit between ICT and the constructivist approach by suggesting that using ICT promotes a more open learning environment and autonomous learning by affording students the opportunity to work on their own with teacher guidance and support. Examples from Sweden by Dennersten (1999), from Australia by McFarlane (1997) and the United Kingdom by Pelgrum and Anderson (1999) suggest that the teacher no longer teaches the children directly but acts as a source of inspiration and support. McFarlane promotes the notion that '*Teachers became consultants within the learning environment and were no longer controllers of it*' (Mc Farlane 1997 p.174). With the teacher as consultant how does technology foster learning? Jonassen (1994) suggests the following roles for technology:

- Technology as tools to support knowledge construction;
- Technology as information vehicles for exploring knowledge to support learning by constructing;
- Technology as context to support learning by doing;
- Technology as a social medium to support learning by conversing;
- Technology as intellectual partner to support learning by reflecting.

2.2.6 A brief summary

The literature suggests that in order to have successful implementation of ICT in learning, teachers and students need to use the technologies to teach themselves and others. John and Sutherland warn that when teachers use technology in teaching and learning they have '*to accept that learning in such an environment is often chaotic, messy, may have no tangible beginnings and ends*' (John & Sutherland 2004, p. 106).

2.3 Section Three

This section of the review briefly focuses on the general problems encountered by NQPTs in their first post, barriers in relation to ICT integration, the role of professional development, with particular emphasis on ICT in-service, the role of the school ICT co-ordinator the principal and the school's ICT Policy. An overall summary of the literature review is presented.

2.3.1 Early days

Cattani opens her study of six NQPTs with the following statement, '*In the days prior to the start of each school year, new teachers enter silent and lifeless classrooms where they dust and arrange and organize*' (Cattani 2002, p. 8). This is the reality for hundreds of NQPTs in Ireland each year. Most have completed three years of intensive study at one of the colleges of education. Now they have a classroom and a class of their own and it is time to put all the theory they have learned into practice. They have the DES Inspector to deal with throughout the coming year, along with many other issues. The role of the Inspector and the probationary year are described in the DES report *Beginning To Teach* DES (2005). However, changes are about to be introduced into the Irish system as the Education Act of 1998 provides a legislative basis for principal teachers to be involved in the probation of NQPTs. The Teaching Council (Amendment) Act of 2006, DES (2006) Ireland, gives the Teaching Council a statutory role in the probation of NQPTs. Following the establishment of the Teaching Council the DES established a pilot project of teacher induction for NQPTs in 2002. A number of teachers have already completed training as mentors and eighty NQPTs have participated in the programme. This new initiative seems to be modeled on the induction programme launched in 1999 in the UK where NQTs are assessed

within their own school, where *‘some staff in the participating schools were more confident about supporting, monitoring and assessing beginning teachers, using the competence-based assessment for qualified teacher status’* (Simco 2002, p.13) having completed training in mentoring.

However the NQPTs in this study were probated by the Inspectors. The Inspector evaluates the NQPT in the following areas,

- *Planning, preparation and recording of progress;*
- *Classroom management and organization;*
- *Quality of teaching throughout the curriculum;*
- *Quality of pupils’ learning in curriculum areas.* (DES 2005 p.11)

The Inspector spends, on average, two and a half days with the NQPT during their probationary year. While the use of resources by the NQPT is highlighted in the Inspector’s report, no specific reference to ICT use is mentioned.

In relation to NQPTs, Cattani (2002) discusses the issues regarding parents and alludes to the distraught parent, the impassive parent, confrontational parent, supportive parents along with difficulties with classroom management. Hammond (2001) draws attention to the difficulty of authority, managing one’s anger, dealing with school management. Moyles and Robinson (2002) discuss accountability while England (1992) brings to light the issue of managing a classroom assistant and teaching the children in their care.

The new phenomenon of a multicultural classroom, discussed by Shilela (2002), is creating difficulties for these NQPTs in Irish schools. The Teacher Training Agency survey of UK NQTs in 2005 shows that they share similar experiences to their Irish counterparts in dealing with minority cultures in their classrooms, (TTA 2005). Along with the issues listed above, NQPTs today have the added responsibility of integrating

and infusing ICT into their teaching. As outlined in section one of this review, the Irish DES has invested heavily in both terms of funding and teacher in-service in ICT and as Ager (1999) suggests, children will come to school with a high level of technical skills and probably from homes with computers of a higher standard than available in the school, thus putting further pressure on these young teachers. While ICT is not a specific subject in Irish Primary Schools, nevertheless the Primary School Curriculum states

Technological skills are increasingly important for advancement in education, work and leisure. The curriculum integrates ICT into the teaching and learning process and provides children with opportunities to use modern technology to enhance their learning in all subjects (NCCA 1999 p. 22).

With this official imprimatur from the NCCA, NQPTs are expected to show some integration and use of ICT in their teaching, but there are many obstacles and barriers in their way.

2.3.2 Barriers to integration of ICT

Pelgrum (2001) reporting on a study in twenty-six countries on barriers to ICT integration listed thirty eight obstacles. The top ten obstacles relate to lack of hardware, lack of teacher skills, difficult to integrate ICT in teaching and learning, scheduling computer room time, insufficient peripherals, lack of time, poor access to www, lack of technical assistance, paucity of training opportunities and insufficient copies of software. Many studies on the factors that prevent teachers from using technology, (Rosen & Weil 1995; Wooley 1998; Sandholtz *et al.* 1997; Williams *et al.* 2000; OECD 2003 and Mello 2006) point to similar results to that of Pelgrum. Comparable research on the barriers listed above is provided by Daws. She lists three further barriers, *ownership of up-to- date technology, a sense of purpose for ICT use and inclusion in a supportive community of practice*, (Daws 2001, p.66). Teachers'

lack of openness to change as a barrier is discussed by Baylor and Ritchie (2002) along with non participation by school administrators in the change process. Regarding NQPTs and their use of ICT, Anderson (2006) suggests that NQPTs should have access to an electronic network to provide support during their initial years. Given the enormous expenditure in technology in schools in recent years one would suspect that the issue of hardware and access has been addressed to some extent. Wood *et al.* (2005) report on the latest concerns of thirty-seven primary teachers in a mid-sized Canadian city. The barriers discussed were support issues, teacher issues, access, students, hardware and external forces. Wood *et al.* (2005) suggest that the early barriers to ICT integration are being replaced by the issues of time and support. Teachers are getting to grips with the technology but the technology is changing rapidly and the teachers see themselves as the '*perpetual novice*' and their comfort zone is constantly being eroded. Berg (2002) implies that teachers need meaningful professional development based on their own specific needs regarding ICT integration.

2.3.3 Professional Development

Hargraves argues that *today's teachers need to be committed to and continually engaged in pursuing, upgrading, self monitoring and reviewing their own professional learning* (Hargraves 2003, p.24). In 2004, the NCTE reported that almost seven thousand Irish primary teachers participated in ICT professional development programmes delivered throughout the country, NCTE (2004). The courses are for twenty hours and are given over a ten week period after school hours. Some of the programmes are delivered through

one week courses during the summer vacation. These courses were funded by the NCTE and took place in Education Centres, Primary and Secondary Schools, Colleges of Education and on-line summer schools. Topics covered included ICT basic skills, internet usage, web design and multimedia design. Further courses on ICT and specific subjects were also provided. These included ICT and Geography, ICT and Science, ICT and History, ICT and Visual Arts, ICT use in the Infant classroom, ICT Infusion and Integration, the latter two being delivered on line to over two hundred teachers. Following the introduction of broadband into schools the NCTE provided a number of courses on network management and technical support. These courses were aimed at the school ICT coordinators. In 2006, the Irish National Teachers Organisation (INTO) provided thirty-four summer courses on using ICT as a teaching and learning resource. Specific professional development on ICT for NQPTs is not provided by any institution. Mulkeen reviewed the professional programmes on offer in Ireland and found that

Despite the high participation in the training already provided, an overwhelming majority of schools asked for more training, particularly focused on curricular use of ICT (Mulkeen 2004, p.23).

McCormick and Scrimshaw suggest that few in-service programmes *take a perspective that emphasizes understanding teaching and learning* (McCormick & Scrimshaw 2001, p. 55). Galanouli *et al.* report comparable findings from a study on the New Opportunities Fund (NOF) training for all UK teachers where teachers expressed disappointment at the level of training given and in particular *towards the importance of computers for teaching* (Galanouli *et al.* 2004, p.77). Collier (2001) suggests four novel ways in ICT professional development based on in-house training within the school. She proposes using technology mentors within the school, an approach favoured by initial teacher educators, using the ‘Generation www.Y’ or

tech-savvy students to assist with technical issues, set up a school based team of interested teachers to drive the initiative with full support from school management, and finally McKenzie (1999) proposed introducing a system whereby the teachers themselves become researchers through Action Research Inquiry. Since 1998 Mary Immaculate College has offered an M.Ed in ICT in Primary Education, highlighted by the OECD (2001). This course provides the participants with the opportunity to undertake Action Research in their own classrooms based on some aspect of ICT.

2.3.4 Summary

The traditional ICT skills based programmes seemed to have worked in that, teachers have the ability to use technology. However professional development needs to move on and show the link between ICT and learning. Dale *et al.* argue that teachers need to see ICT in context, build confidence and understand that ICT can assist them in the classroom, *the more difficult thing is actually building the confidence of teachers even if they had the resources to see its potential, or finding time to explore that* (Dale *et al.* 2004, p. 465).

2.3.5 School ICT Co-ordinator

Somekh (cited in Lai & Pratt (2004) found that the school ICT co-ordinator is responsible for professional development, student skills, hardware and software issues and using ICT to support teaching and learning. Reilly (1999), Lucock and Underwood (2001) suggest that the ICT co-ordinator must first of all be a teacher and not become an '*electronic janitor*'. Fox gives the following list of activities necessary to be an effective ICT co-ordinator

- *Take responsibility for standards in ICT throughout the school;*
- *Oversee the ICT scheme of work;*
- *Co-ordinate ICT across the whole curriculum;*

- *Support and train colleagues in their use of ICT;*
- *Manage ICT resources;*
- *Establish and evaluate the school ICT policy* (Fox 2003, p.15).

Kennewell *et al.* (2000) discovered that many ICT co-ordinators are NQPTs. They are seen as having greater personal ICT skills and a willingness to take on this role. However, at times they have difficulty relating to senior colleagues and others. On occasions they take the class for ICT leaving them little time to influence the overall ICT policy. Co-ordinators also highlight the fact that they do not have the time to take further professional development particularly in relation to up-skilling on new hardware and software. Lai and Pratt (2004) argue that many ICT co-ordinators do not get sufficient recognition for the work they do.

2.3.6 The Role of the Principal Teacher

Are principal teachers managers or leaders? Zaleznik (1997) suggests that managers focus on improving while leaders focus on creating new approaches. Gardner (1990) lists nine tasks that seem to be the most significant functions of effective leadership.

They are

- Envisioning goals;
- Affirming values;
- Motivating;
- Managing;
- Achieving workable unity;
- Explaining;
- Serving as a symbol;
- Representing the group;
- Renewing.

The effective leader should be in a position to select the appropriate goal from the organisation's list and put their personal emphasis on which goal to achieve first. Schools by their nature are team orientated, therefore the ability to manage and lead a

team is essential for all principal teachers. Cheng proposes that there are seven models that can be *used to conceptualise, manage and pursue education quality* (Cheng 2002, p.60) within a team. The models are a) Goal Developer, b) Resource Developer, c) Process Engineer, d) Social leader and satisfier, e) Environmental leader, f) Supervisor and g) Organisational developer. Fullan presents a framework of five components that *represent independent but mutual reinforcing forces for positive change* (Fullan 2001, p.3) namely moral purpose, understanding change, relationship building, knowledge creation and sharing and coherence making. With regard to educational leadership and ICT, the OECD call for *visionary school leadership* (OECD 2001, p.16) to enable ICT to take hold. Kennewell *et al.* argue that *head teachers wishing to embed a positive ICT culture must make their intentions clear to all through the processes that take place on a daily basis* (Kennewell *et al.* 2000, p.35). How the principal teachers in this study shaped up to the requirements is discussed in Chapter Five.

2.3.7 ICT School Policy

The NCTE (2002) published a pack advising schools in preparing their ICT policy. All schools are expected to publish this policy and update it on a regular basis. The policy document has to include data on management and planning, ICT and the curriculum, staff development, school ICT culture and ICT resources and infrastructure. Harris (1994) recommends that the ICT policy be reviewed, taking into account the expertise of the staff and pupils. Kennewell *et al.* (2000) support the notion that all teachers be involved in the production of the policy to ensure ownership and commitment to the process. It is interesting to compare the policy

guidelines proposed by Drage and Evans (1988), BECTA (1998) and NCTE (2002) as very little has changed in fourteen years.

2.3.8 Brief Summary

This section discussed the role of the ICT co-ordinator, the Principal and the School ICT Policy. ICT co-ordinators need time to develop their own personal ICT skills, need more recognition for their work, need the support of the principal and must be a teacher and not an '*electronic janitor*'. The principal must show leadership and a commitment to change and support his/her ICT co-ordinator. The ICT Policy must be a shared document by all staff and needs to be updated on a regular basis to take into account the changes that will inevitably happen as technology changes.

2.4 Overall Summary of Literature Review

The review was presented in three sections. Section one provided a road map of the work undertaken in Ireland in relation to ICT since 1984 leading up the *IT2000* policy framework document of 1997 and to the installation of broadband to all schools in 2004. Various evaluation and reports were presented. The ratio of computers per child in the school has improved significantly, with a ratio of 9.06:1 in Irish primary schools (Shiel and Flaherty 2006) with a high level of investment by the state with some assistance from the corporate sector. The National Centre for Technology (NCTE) was established with the aim of assisting teachers to integrate and infuse technology into their teaching. Twenty one full-time ICT advisors are in place based in the local Education Centres. Over 80% of teachers have participated in at least one ICT course. Today teachers are requesting more courses based on classroom ICT integration and subject specific related matters. However, recent reports and

evaluations are showing little interest in pre-service or NQPTs needs in relation to ICT. Part two of section one reviewed ICT use in the primary classroom. Much of the literature points to pockets of success but there appears to be no overall change in teaching style as a result of ICT. Where success was noted, it usually was in a setting with a rich ICT environment, enthusiastic teachers and highly motivated principals.

Section two examined ICT and pre-service and personal access to ICT through laptop use. With a high percentage of trainee teachers arriving in college with basic ICT skills more emphasis needs to be placed on the use of ICT in teaching. Modules on incorporating ICT management, field experience, spending time with role models, designing and producing appropriate resources for teaching practice need to be established in all colleges as a matter of urgency. Teaching practice supervisors and co-operating teachers need to be proactive in supporting the young student teachers. Faculty of education departments need to model ICT use in their own teaching (Otero *et al.* 2005). Abbot Faris (2001) argue that trainee teachers need to be given time to reflect on their own use of ICT and understand its value in teaching and learning. Laptop programmes have been established in one hundred and forty colleges worldwide. The findings from these programmes, is positive, particularly in relation to basic skills and access but more needs to be achieved regarding creative use of the technology in teaching and learning. Finally this section briefly discussed learning and teaching with technology. The literature implies that teachers need to adopt a constructivist approach but the review on ICT use in the classroom in section one, was scarce in providing enduring examples of this approach.

The final section of the review discussed the general problems faced by NQPTs and in particular examined the barriers they face in relation to ICT integration. Access to hardware and software is not a major concern. However, issues surrounding

classroom management, time, supportive colleagues and principal, demands of the curriculum and specifically the demands of the inspector during probation year are all areas of concern. Appropriate professional development based on teachers needs and relating to teaching and learning are highlighted. The role of the school ICT co-ordinator is seen as paramount to successful implementation of ICT. He/she must have a teaching background and have the full support of the principal. Principal teachers must show leadership and vision, involve the staff and create joint ownership of the school ICT policy. The policy must be a living document and reviewed on a regular basis. The ICT skills and enthusiasm of NQPTs should be utilized and encouraged.

2.4.1 Closing comments

On a personal note, having reviewed the literature, I was disappointed at the progress of ICT integration and infusion. Much of the literature was repetitive giving similar examples of the barriers to ICT integration and presenting frameworks for successful implementation. Access to technology is improving in all schools but evidence is scarce in relation to the long term positive effects of ICT.

Chapter Three Methodology

'The purpose of case study is not to represent the world, but to represent the case'
Stake (1994)

3.0 Introduction

This multi-case study examines issues surrounding the use of Information Technology and Communications (ICT) by Newly Qualified Primary Teachers (NQPTs) in their early teaching career. All these NQPTs had access to laptop technology and ICT specialisation courses during their initial teacher education. Wolcott suggests that *'qualitative methods have come to be widely known and accepted'* (Wolcott 1990, p.26). He further suggests that there is no longer a need to defend or provide an exhaustive review of the literature on interviewing and observation methods. However, for the purpose of this thesis, all data collection methods and the work as it unfolded in the field during the study, is discussed to ensure rigour, validity and trustworthiness.

This study employed a multi-case study approach using an *ethnographic perspective* as opposed to a complete ethnography as discussed by Gee and Green (1998). Windschitl and Sahl suggest that this ethnographic perspective does not focus on understanding an entire culture *but rather can be used to take a more focused look at the actions of members of the group, examining bits of life*, (Windschitl & Sahl 2001, p. 173). This form of case study approach is discussed by Creswell (2005) and LeCompte and Schensul (1999). Merriam argues that *a qualitative case study is an intensive, holistic description and analysis of a single instance, phenomenon or social unit* (Merriam 1998, p.27). Miles and Huberman view a case study as *a phenomenon of some sort occurring in a bounded context* (Miles & Huberman 1994, p. 25). Smith

(1978) & Alderman *et al.* (1983) propose that *The most straight forward examples of 'bounded systems' are those in which the boundaries have a common sense obviousness, e.g. an individual teacher, a single school, or perhaps an innovatory programme'* (p.3). This study is bounded in that there is a limit to the number of cases involved, nineteen cases for survey and thirteen for close examination. Case studies have been further defined as being particularistic, descriptive and heuristic. Taking advice from Shaw this study concentrates *attention on the way a particular group of people confronts specific problems, taking a holistic view of the situation* (Shaw 1978, p. 2). It is descriptive in that instead of presenting numerical data the case study uses prose and literary techniques to describe, elicit images and analyze the situation. Being heuristic suggests that the study should, according to Merriam *illuminate the reader's understanding of the phenomenon under study* (Merriam 1998, p.30). Patton proposes that *heuristics is a form of phenomenological inquiry that brings to the fore the personal experience and insights of the researcher* (Patton 1990, p.71). Patton also suggests that to perform heuristic inquiry the researcher must have personal experience and interest in the phenomenon under study and the participants must share that interest. In this case, the shared intensity of experiences involves the phenomenon of using ICT in teaching and learning by both the NQPTs and the researcher.

3.1 Why a multi-case study?

The research question is: how do newly qualified primary teachers (NQPTs), competent and confident users of technology, integrate ICT into their teaching during their initial teaching career? Yin suggests that for *how and why* questions case studies have a distinct advantage over other methodologies (Yin 1994, p. 9). Bromley argues that case studies get as *close to the subject of interest as they possibly can* (Bromley

1986, p. 23). Using case study methodology will allow for direct access to thoughts and feelings of the participants. The sub themes of this study are interested in the process of ICT activity in the schools and classrooms of the NQPTs.

- How does the ethos of the school impact on newly qualified primary teachers, competent and confident users of technology, use of ICT in their classrooms during the first few years of their initial teaching career?
- How did the voluntary laptop programme and pre-service ICT training at Mary Immaculate College, equip these to integrate and infuse ICT into their teaching?
- How did the NQPTs mandatory use of technology while at Mary Immaculate College contribute to the integration and infusion of ICT during their initial career?

Reichardt and Cook define process as *describing the context and population of the study* (Reichardt & Cook 1979, p.21). This study worked closely with all the participants in their professional surroundings, their schools and classrooms. This multi-case or multi-site study offered the opportunity to cross-case analyse the findings from all settings thus, as suggested by Miles and Huberman, strengthen *the precision, the validity and stability of the findings* (Miles & Huberman 1994, p. 29).

3.2 Theoretical Framework for this study

In order to get a clearer understanding of the ethos of the schools of the study adopted ‘*An Activity Theory Framework*’ as used Lim and Hang in their study of ICT integration in Singapore schools. Using this framework allowed a more detailed

analysis of *the whole configuration of events, activities, contents and interpersonal processes taking place in the context that ICT is used* (Lim & Hang 2003, p. 50).

What does activity theory propose?

'In essence, activity theory proposes that activities consist of processes both at the individual and social level, including the mediational tools and artefacts that link the processes together. These tools may include ICT ones that mediate work functions among members of the learning environment' (Lim, 2003 p. 50).

Taking the activity system of the individual classrooms of the NQPTs as the units of analysis for this study, evidence was gathered regarding the internal and external contradictions of the system. For example within the classroom (*internal*) is there a change in teaching style with the introduction of ICT and what demands is society (*external*) making on the school? Is society demanding higher grades? This activity framework provided the study with a conceptual map of the learning environment along with information on other stake holders within the school setting including details on the external factors, such as the Inspector, the DES, the local community and the ethos of the school. This information informed the evidence regarding how the activity of one group within the system affects the other either being a barrier or a help to the NQPT integrating ICT into his or her classroom. This framework involved all the actors in the study, the children in their class, the ICT co-ordinator both local and national, the principal, the school ICT policy, the school inspector and the inspectors' reports on the NQPTs.

Activity Theory Framework

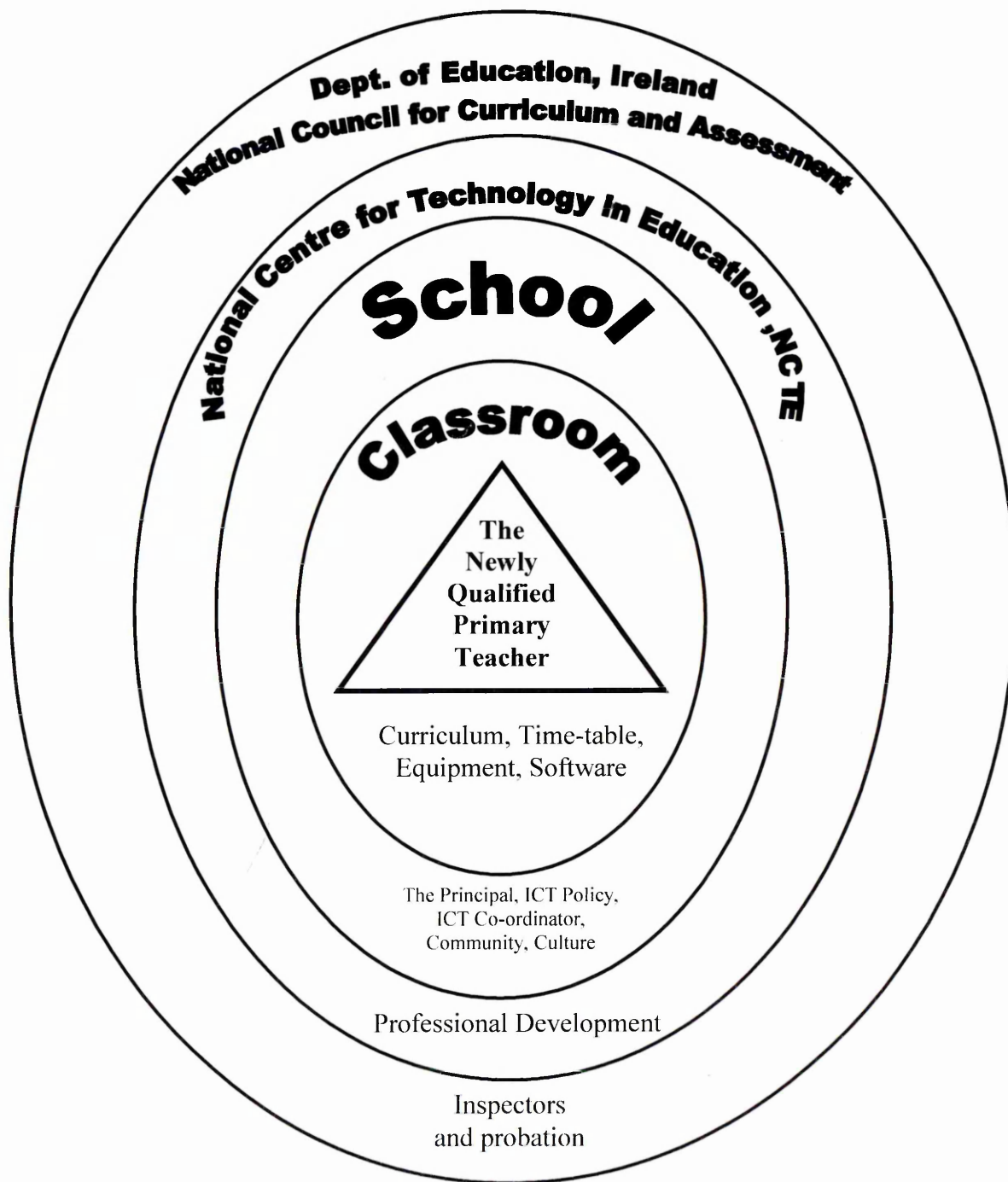


Fig. 2

The Activity Theory Framework adapted from Lim and Hang (2003)

Using this activity framework suggested a qualitative approach and involved interpretative work. Therefore an interpretative approach, supported by data collected through interviews, observations, document analysis, field notes and memos was appropriate for this study.

3.3 Sample

For this study the researcher used a purposeful sample of nineteen NQPTs for postal survey and thirteen for close observation and interview. All participants had access to personal laptop technology and undertook an ICT elective during initial teacher education. The total number of students for the years 2001 to 2004 having laptops and taking ICT as an elective in their final year was two hundred and fifty students (250). Sampling was based on classes taught, Infants through to Sixth Class, the use of a computer lab and single computer in the classroom, rural, urban and mixed gender classes plus school location, i.e. middle income and designated disadvantaged schools. The thirteen sites were scattered around the country to ensure that adequate geographical representation was achieved, involving a number of NCTE ICT co-ordinators and school inspectors. The sites chosen were, Dublin City, Galway City, Roscommon, Portlaoise, Limerick City, Limerick County, Cork City (X2), Cork County (X2), Kilkenny and Kildare (X2). (See Appendix E)

Various forms of purposeful sampling are illustrated by writers such as LeCompte and Schensul (1999), Patton (1990), Creswell (2003), Leedy and Ormond (2005) and Merriam (1998). They discuss typical, unique, maximum variation, convenience, snowball, chain and network sampling. For the purpose of this study the sample is unique, homogenous and stratified in that the criteria for being within the sample are clearly laid down. Laptop computer students, who undertook an elective in ICT in their final year at College, graduated and are at present teaching in a primary school in

Ireland. Mason argues that the sample should *be chosen to provide a detailed close-up or meticulous view of the cases* (cited in May 2002, p.132). This sample is the only group with the background experience and knowledge to fulfill the criteria for inclusion in this study.

3.4 Positionality of Self in the research and researcher bias

As a former primary teacher of twenty six years experience with a very deep interest in the use of technology in the classroom and as the lecturer in College with responsibility for ICT in Education, the researcher has a bias towards hoping that all the cases in this study will highlight success stories in all the classrooms. Rubin and Rubin warn about not following up on leads during interviews or observations that *contradict your own preconceptions* (Rubin & Rubin 2005, p.82). Sanchez-Jankowski reminds researchers to inform their reader and themselves of all their biases *while they are observing and recording the data*' (Sanchez-Jankowski 2002, p.146) and further warns of the problem *is what we've got, what they saw?*' (p. 157).

Ethics

3.5 Limitations of the Case Study Approach

Guba and Lincoln suggest that case study can *oversimplify or exaggerate the situation leading the reader to erroneous conclusions*. They further suggest that case studies are limited in that the researcher *is the primary instrument of data collection and analysis* (Guba & Lincoln 1981, p. 377). Hamel (1993) discusses the lack of rigour in the collection of data and the issue of researcher bias. As the researcher in this study is professionally involved in the topic, all conscious biases will be discussed and highlighted. Merriam raises the issue of the researcher as the primary instrument of data collection and warns that the presence of the observer may *bring*

about changes in both parties' behaviour (Merriam 1998, p.103) during the observation. Further limitations include the small sample within this study and the timeframe of the study. These topics are discussed again in Chapter Seven at 7.2.

3.6 Practical Methods

3.6.1 Data Collection Processes

Bassey (1999), Merriam (1998), Creswell (2005), Silverman (2000), Yin (1994), Stake (1995), Leedy and Ormrod (2005) and others refer to the standard methods of data collection in qualitative case study research. The methods include surveys, interviews, observations, document analysis, field notes and memos. These data collection methods were used during this study.

3.6.2 Cohort Survey

The researcher's initial contact with all participants was through a structured cohort survey (Appendix A). Creswell defines a cohort *as a sub-population based on some specific characteristic and then studies that sub-population over time* (Creswell 2005, p. 357). In this survey the researcher attempted to gather basic information on the participants regarding their present teaching role, class, school etc., and their situation with the Department of Education Inspectorate regarding probationary status. All NQPTs in Ireland have to undergo a final assessment by the Department of Education during their first year of teaching. If successful, the young teacher gains fully qualified status and is eligible to move up the pay scale. If unsuccessful, the NQPT has a further four years to complete this final assessment. All of the information gathered was relevant but was only used to inform the final make up of the actual sample for classroom observation and more in depth interviews. The data gathered

through the survey was not used by the researcher to inform the findings or conclusions of this study.

3.6.3 Interviewing

This section discusses interviewing as a qualitative method used by the researcher. The interview is a major part of our everyday life. Job interviews, radio and television interviews with sport and screen celebrities, interviews in the newspapers, informal chats with the doctor, police interviews, all give us information that we may use or not use. But what makes an interview worthwhile? How can we be sure what we are hearing or reading is the truth?

3.6.4 The Interview

Silverman suspects that *the choice of the open-ended interview as the gold standard of qualitative research is pretty wide spread* (Silverman 2000, p.291). Patton suggests that, *the purpose of the interview is to find out what is in and on someone else's mind* (Patton 1990, p.196). Interviews are used to find out what we cannot find out through observation or survey. Feelings, thoughts and intentions are necessary to discover and to discuss in any research study. A successful interview should allow us to enter into the mind and thoughts of the interviewee.

3.6.5 Types of research interview

Wengraf (2001) proposes that there are three types of research interview:

- The informal conversational interview;
- The general interview guide approach;
- The standardized open-ended interview.

This study chose the standardized open-ended interview as oppose to the to the informal and general interview type. This format is used in many evaluation studies where time is limited and a number of subjects need to be interviewed on the same topic. The difference between this format and the general guide approach is that the actual questions are prepared before-hand and the same questions are asked of each individual. Clarifications and elaborations of the questions are prepared beforehand to ensure uniformity and minimise interviewer bias. This format makes analysis of the material gathered easier as it is easy to locate respondents' answers to each question. This might suggest the reason why so many people adopt the interview as their main method for gathering data in qualitative research. Patton suggests three reasons why this format is used by qualitative researchers.

- *The exact instrument used in the evaluation is available for inspection by decision makers and information users;*
 - *Variation among interviewers can be minimised where a number of different interviewers must be used;*
 - *The interview is highly focused so that interviewee time is carefully used.*
- (Patton 1990, p. 203)

This form of interview *helps minimise issues of legitimacy and credibility by carefully collecting the same information from everyone interviewed* (Patton 1990p.203).

3.6.6 Questions

Rubin and Rubin suggest *all responsive interviews are built up by combining around main questions, follow-up questions and probes* (Rubin & Rubin 2005, p.140). An interview with weak or inappropriate questions will yield very little relevant data and will not add to the reliability or validity of the interview. Taking advice from Rubin and Rubin the researcher designed an interview protocol or conversational guide. To help with this, Patton's six basic types of questions were deemed appropriate. These are questions relating to

- Experience/ Behaviour;
- Opinion/ value;
- Feelings;
- Knowledge;
- Sensory;
- Background/ Demographics.

The sequencing of questions was important. To put the interviewees at ease each interview started with straightforward, factual questions leading to more probing questions as the interview progressed. Patton believes that once descriptions are given it is easier to move on to opinions and feelings. Knowledge and skill questions can be threatening and are best achieved when *some rapport and trust has been established in the interview* (Patton 1990, p.211)

3.6.7 Further issues in interviewing

When designing the open-ended questions the researcher tried to ensure the questions were not leading or giving a choice of multiple responses. The response must be the respondent's own feelings, thoughts and emotions. Questions began with 'How do you feel, What is your opinion, What do you think.' Such questions gave the respondent the opportunity to respond in their own language and terms. Problems can and do occur with the 'YES/NO' answer (*Dichotomous Response Questions*). This also occurs during research interviews. The respondents are left with only one answer and are not allowed elaborate on their response. This increases the problem of validity and reliability as we are getting the interviewer's thoughts and not those of the respondent. Presupposing that your informant has detailed knowledge of an event or a phenomenon allows the interviewer to use presupposition questions. Patton argues that *by presupposing that the person being interviewed does, indeed have something to say, the quality of the descriptions received is likely to be enhanced* (Patton 1990, p. 222). Asking single questions can lead to a clearer picture. Remaining neutral during the interview is paramount to the success of that interview. As interviewer, the

researcher tried to remain aloof from the responses, neither agreeing nor disagreeing with the respondent. Showing bias could lead the interviewee to respond in a way the interviewer agrees with. The researcher took the advice of Rubin and Rubin (2005) and used the Grand Tour Question. This question, usually at the beginning of the interview, set the tone of the interview and let the interviewee respond as his/her own time. Floating prompts, verbal and non-verbal and probes were also used to encourage the informants to give more information. By incorporating this advice, when designing the interview protocol and by piloting the questions with an appropriate sample, careful analysis and coding of the transcripts, respondent validation and triangulation with other sources such as observation and use of documents the researcher hoped to eliminate criticism regarding , validity and reliability. Permission was requested of all participants to audiotape record the interviews using a digital recorder. All agreed and interviews were transcribed and imported into NVivo for coding.

3.6.8 Observation

Patton proposes that *scientific inquiry using observational methods requires disciplined training and rigorous preparation* (Patton 1990, p. 122). But how does the researcher ensure that rigour. Firstly, the researcher describes what they see. This involves very detailed observation and thick description of what is observed. A successful description will take the reader into the site and give him/her a very clear understanding of the phenomena being studied.

Kidder (1981) suggests that observation is a research tool when it serves a formulated research purpose, is planned deliberately, is recorded systematically and is subject to checks and controls on validity and reliability.

3.6.9 Forms of observation: Overt and Covert

Gold (1958) provides us with four variations of observations. They are

- Complete participation;
- Participant as observer;
- Observer as participant;
- Complete observer.

What are the differences? In Complete Participation, the researcher becomes part of the study unknown to the other people involved. This has a problem with 'ethics'. Is it fair and just on the people being observed? Disagreement abounds as to whether this type of observation is ethical or not. In Participant as Observer, the researcher, while not wholly concealed has a problem in getting very detailed information. Observer as Participant is known and the information he/she gathers will depend on his/her relationship with the group. Finally the Complete Observer may go fully public or hide behind a screen as in police interviews with suspects as seen regularly on television programmes and films. The choice of observation depends on the topic for study. Other terms used to describe observation are offered by Creswell (2005) and Yin (1994) are Direct Observation and Non Participant Observer.

For this study the researcher chose to be observer as participant, direct observation and non participant observer. The researcher had permission from the class teacher and school principal to observe ICT classes. The researcher had a close relationship with all the young teachers and was accustomed to being in classes observing as it is a major part of the researcher's professional duties within the College. Electronic devices were not used during the observations. Descriptive notes and reflective comments were recorded as the session progressed using the FIAC (Flanders Interactive Analysis Category) instrument. (Appendix F)

3.6.10 Some other issues to consider when observing

To ensure rigour the observer researcher must always ensure that the final write up of observations is clear and free from interpretive adjectives. A description of the physical setting is vital. Readers' perceptions of classroom settings may vary. For example describing a setting as a schoolroom will leave the reader with his/her memories of their own school experience. Describing in detail the participants of the study ensures the reader understands the role and place of each participant. Watching for the unplanned activity can be very enlightening. The language used by participants during observations must be taken into account. The researcher must use the actual words as spoken by the participants while writing and reporting observation notes. Observing non-verbal behaviour can also enhance a study. Observing what does not happen is also seen as a useful tool for the researcher. As the researcher is observing he/she is also making contact with the participants within the study. Sanchez-Jankowski believes that the researcher's personal and field-research background is very important *because the information accumulated during the process will have provided him or her with cues to more accurately decipher what is important and what is not* (Sanchez-Jankowski 2002, p.146). This researcher's background in teaching and using ICT helped in deciding what was important during the observations.

3.6.11 Summary of observation

This section discussed observation, its value, types, covert or overt, timing of observation, unplanned observation and observing the unusual occurrence. However observation is not enough to give a clear and holistic picture. The qualitative

researcher needs to use a combination of observations, interviewing, and document analysis, to validate and cross-check evaluation findings.

3.7 Ethical Issues

Opie advises that *ethics has to do with the application of moral principles to prevent harming, or wronging others, to promote the good, to be respectful and to be fair* (Opie 2004, p. 25). In undertaking this study the researcher provided a letter that acknowledges the participants' rights. This letter was distributed with the first survey and to all the participants involved in the classroom observations and interviews. Based on the recommendations of Creswell this form included (see Appendix B) information on data collection strategies as well as information regarding

- *The right to participate voluntarily or withdraw;*
 - *The purpose of the study;*
 - *The procedures of the study;*
 - *The right of participants to ask questions;*
 - *The benefits of the study to the individuals participating;*
 - *Space for signatures of both researcher and participant agreeing to participate in the study.*
- (Creswell 2003, p.65)

As well as guaranteeing all participants privacy and anonymity, permission was sought from school principals to access the classrooms of the participating teachers. Full disclosure of the research methods and questions was provided to these 'gatekeepers'. Permission to discuss DES Inspectors' reports on the participating teachers was sought and granted.

3.7.1 Gaining admission to sites

As a lecturer in ICT in Mary Immaculate College, and having worked with all the participants while in College, the researcher had no difficulty in gaining access to the classrooms or schools of the participants in the study.

3.7.2 Ethical issues in Data analysis and Interpretation

In analysing the data, the researcher must protect the anonymity of the participants and must ensure the data will be kept for a period of five years following completion of study. Transcripts of the interviews were returned to all participants for validation and ownership of data was cleared with participants prior to the final write up of the study

3.8 Pilot phase

In preparing for this study the researcher undertook two pilot interviews and five pilot surveys during June 2005. An interview guide was prepared (see Appendix C) and both NQPTs were interviewed in the researcher's office in the College. Two local teachers from different schools and teaching different grades were chosen. Both interviews were taped recorded and later transcribed.

3.8.1 Lessons learned from pilot interviews.

Both participants were given copies of the interview schedule. This led to problems in that both interviewees were reading ahead and preparing answers in advance. Secondly, the interview schedule had too many questions and did not allow time to delve deeply into topics that needed probing. Thirdly, the schedule did not allow for age and experience. One of the participants had only one year's teaching experience as a temporary teacher and the other had three years experience in different schools.

Some of the questions were not relevant to both and caused confusion. This issue was addressed during the actual study interviews.

3.9 Trustworthiness

Rather than using the concept of validity, the study adopted the concept of trustworthiness as it was seen as more appropriate to an interpretive approach as proposed by Bassey (1999, p.44). Based on the work of Lincoln and Guba (1985), Bassey suggests eight questions to ensure trustworthiness in the case study.

- *Has there been prolonged engagement with the data sources?*
 - *Has there been persistent observation of emerging issues?*
 - *Have raw data been adequately checked with their sources?*
 - *Has there been sufficient triangulation of raw data leading to analytical statements?*
 - *Has the working hypothesis, or evaluation, or emerging story been systematically tested against the analytical statements?*
 - *Has a critical friend thoroughly tried to challenge the findings?*
 - *Is the account of the research sufficiently detailed to give the reader confidence in the findings?*
 - *Does the case record provide an adequate audit trail?*
- (Bassey 1999, p.76)

Lincoln and Guba argue that the basic question regarding trustworthiness in naturalistic inquiry is: *How can an inquirer persuade his or her audiences that the findings of an inquiry are worth paying attention to, worth taking account of?* (Lincoln & Guba 1985, p.301). Criteria for trustworthiness include credibility, transferability, dependability, and confirmability.

3.9.1 Credibility

Lincoln and Guba (1985) recommend a variety of strategies for improving the likelihood that findings and interpretations produced through naturalistic inquiry methods will be credible. Two of these strategies are peer debriefing and member checking.

3.9.1.1 Peer debriefing

Lincoln and Guba define peer debriefing as *a process of exposing oneself to a disinterested peer in a manner paralleling an analytic session and for the purpose of exploring aspects of the inquiry that might otherwise remain only implicit within the inquirer's mind* (Lincoln & Guba 1985, p. 308). The peer de-briefer for this study was a colleague at Mary Immaculate College.

3.9.1.2 Member checking

Member checking is a process through which respondents verify data and the interpretations thereof. Each participant who was interviewed and observed received a copy of the interview transcripts for review, clarification, and suggestions. All participants returned the transcripts and agreed they were a true account of the interviews.

3.9.2 Transferability

Naturalistic inquiry depends on a presentation of solid descriptive data or thick description as suggested by Patton (1990) to improve an analysis' transferability. In order to enable others wanting to apply the findings of this study to their own research to make an informed decision about whether to do so, thick description of the experiences observed and identity of the participants are provided.

3.9.3 Dependability and Confirmability

Lincoln and Guba (1985) argue that both dependability and confirmability can be determined through a properly managed audit. To establish dependability, the auditor examines the process by which the various stages of the study, including analytic

techniques, was conducted. The auditor determines whether this process was applicable to the research undertaken and whether it was applied consistently. To illustrate confirmability, a record of the inquiry process, as well as copies of all taped interviews and discussions, notes from interviews, discussions and observations were maintained.

The eight questions proposed by Bassey (1999), and the criteria for trustworthiness outlined by Lincoln and Guba, (1985) to ensure validity concur with the strategies proposed by Creswell. Creswell discusses triangulation of data, member checking, repeated observations, peer examination and clarification of researcher bias.

During this study the researcher allocated half a day observing eight NQPTs in their classroom setting. The remaining five participants were unable to take an ICT class during my visit. Two participants were infant teachers and the computer room was occupied by other classes during the visit. One participant was a learning support teacher and did not have access to a full class. Of the remaining two participants, one was a teaching principal teacher and the interview took place outside official school hours as she did not have a relief teacher to manage her class and the other participant was unable to organise an observation time as the school was undertaking a whole school review and the interview took place in an adjacent hotel. Participants were given the opportunity to review the observation notes and interview transcripts to check for accuracy. A review of the data from the thirteen sites through observations and interviews along with DES reports should ensure adequate triangulation

3.10 Data analysis

As this is predominately a qualitative study, the initial postal survey (*questionnaire*) was summarised using Excel. (MS Software) and the data is presented in Appendix D.

As stated earlier this data was not used to inform the findings or conclusions of this study. It was used solely for the purpose of getting background information on the participants prior to site visits interviews and observations.

3.11 Analysis during data collection

Bogdan and Bilken (cited in Merriam 1998) offer helpful suggestions for analysing data as it is being collected. These include

- *Narrow your focus;*
 - *Use analytic questions, reformulate your questions as you work through your data collection;*
 - *Review your notes and pursue specific leads;*
 - *Keep observers comments;*
 - *Begin exploring literature as you are in the field;.*
 - *Use visual devices.*
- (Merriam 1998, p. 163)

Each interview and observation was analysed within a few days of completion. This helped prepare for the next interview and observation.

3.12 Analysing data from the interviews.

With participant permission I audio-tape recorded the standardized open-ended interviews. NVivo, the latest edition of NDI-IST (Non-Numerical, Unstructured Data Indexing, Searching and Theorising) software was used to analyse the data. Bathmaker (cited in Opie 2004) states that while undertaking research, she found that this software allowed her to code and retrieve using categories defined by the researcher, the themes or headings she was using for analysing and making sense of the data. However she advises *that the interpretation of the data, and telling the story, came from detailed reading of the interviews*, (Opie 2004, p. 177).

3.13 Analysis procedure

3.13.1 Phase One: Creating Nodes

All interview transcripts were imported into NVivo. The data from each interview was read and re-read and a set of free codes emerged based on the original interview schedule and the general discussion during the interviews. This was achieved by reading each interview in turn and identifying key words and phrases. A sample of the first set of free codes is presented below. (See Appendix G for full listing)

First set of 153 free codes

NVivo revision 1.2.142 Licensee: D O Grady

Project: Sheffield User: Administrator Date: 01/08/2006 - 12:36:22
NODE LISTING

Nodes in Set: All Free Nodes

Number of Nodes: 153

- 1 access at home
- 2 activity based
- 3 administration
- 4 advising teachers
- 5 age profile teachers
- 6 answerability
- 7 appropriate software
- 8 attention grabber
- 9 authoritative
- 10 broadband
- 11 CAO
- 12 children's attitude
- 13 children more advanced

3.13.2 Phase Two: Creating Trees

Having completed the first phase of analysis the researcher re-read the data and created a set of TREES redefining the data from phase one. A sample of the TREES is presented below. (See Appendix G for full listing)

NVivo revision 1.2.142 Licensee: D O Grady

Project: Sheffield User: Administrator Date: 01/08/2006 - 12:41:27
NODE LISTING

Nodes in Set: All Tree Nodes

Number of Nodes: 218

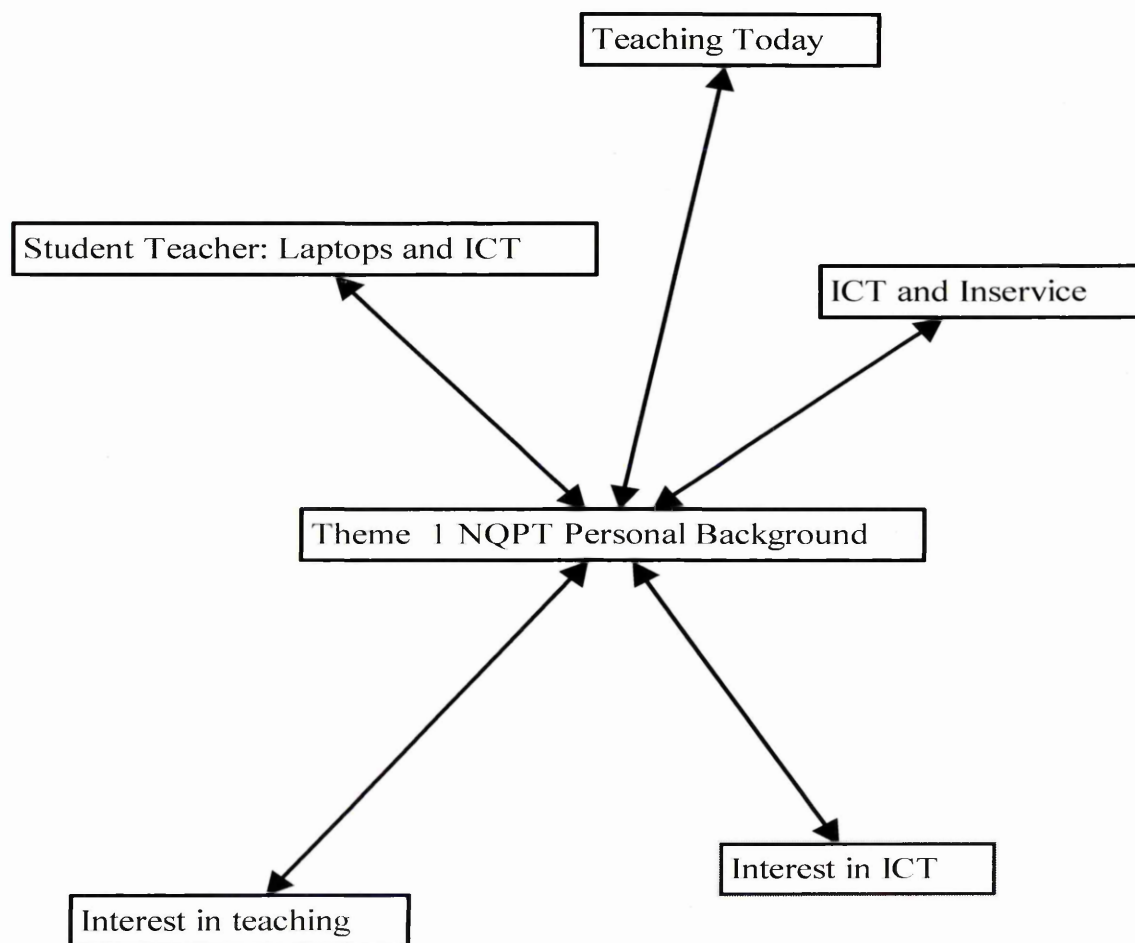
- 1 (1) /Inspector
- 2 (1 1) /Inspector/diploma
- 3 (1 2) /Inspector/diploma and inspector interests
- 4 (1 3) /Inspector/encouragement from the inspector
- 5 (1 4) /Inspector/final report
- 6 (1 5) /Inspector/inspector negative response
- 7 (1 6) /Inspector/inspector positive
- 8 (2) /ICT Mandatory
- 9 (2 1) /ICT Mandatory/mandatory ICT and
- 10 (3) /NCTE Coordinator
- 11 (3 1) /NCTE Coordinator/ncte co-ordinator
- 12 (3 2) /NCTE Coordinator/ncte coordinator year one
- 13 (3 3) /NCTE Coordinator/broadband

3.13.3 Phase Three: Creating Themes

The final phase involved the selection of the five final themes for detailed discussion.

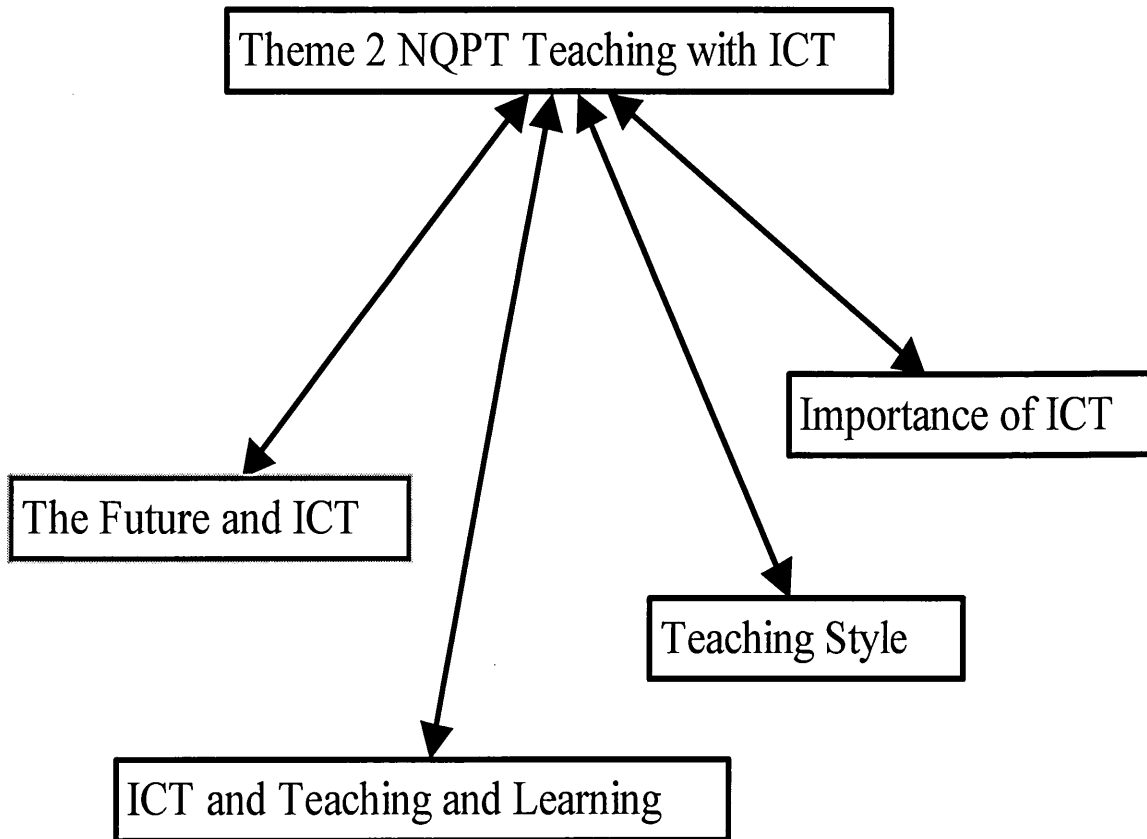
These themes were chosen as being the most appropriate based on the research question and on the data gathered during interviews and observations. The five themes are presented in graphical format.

Theme One: NQPTs Personal Background



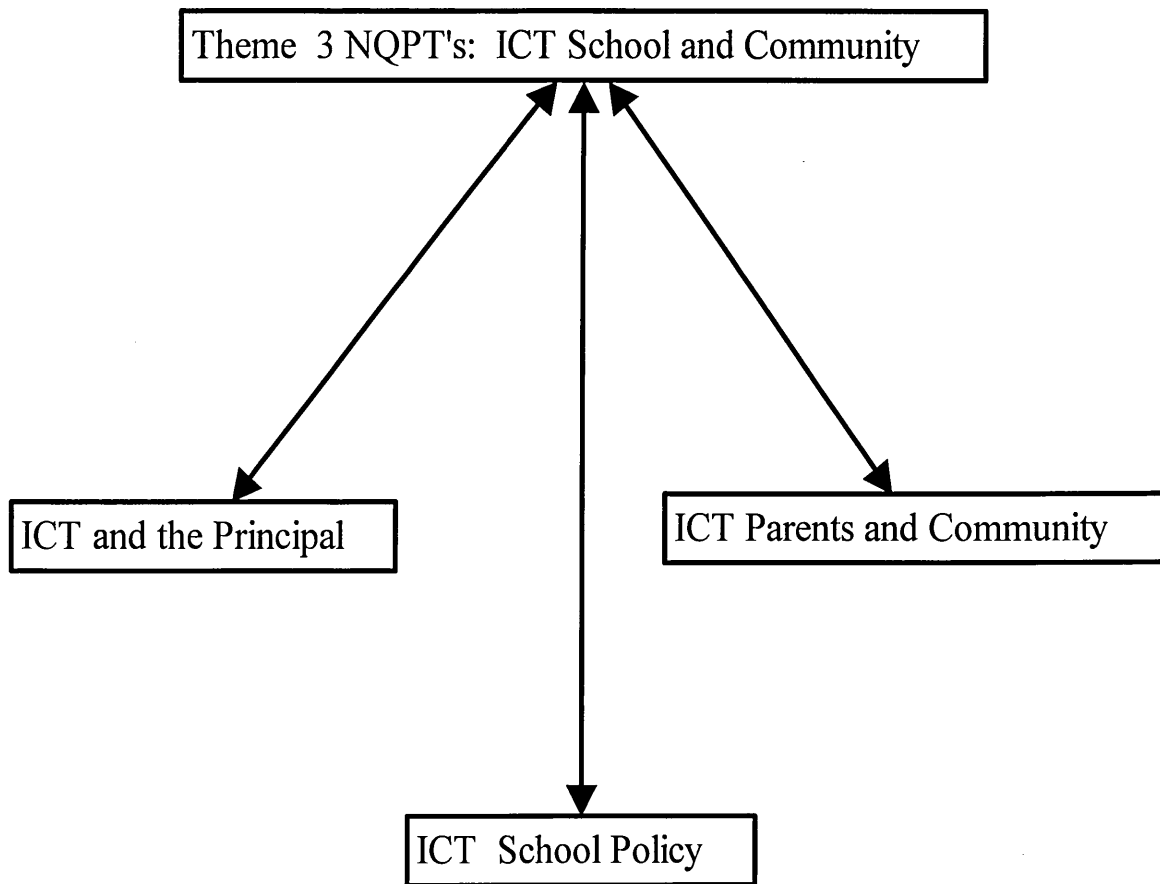
Theme One examines the personal backgrounds of the NQPTs in relation to their early interest in teaching as a career. This theme also discusses their thoughts on the voluntary laptop computer programme while as students in the College, their initial interest in ICT and their College ICT experience, their reflections on teaching today and their views on ICT in-service as it relates to their particular situation as NQPTs.

Theme Two: NQPTs Teaching with ICT



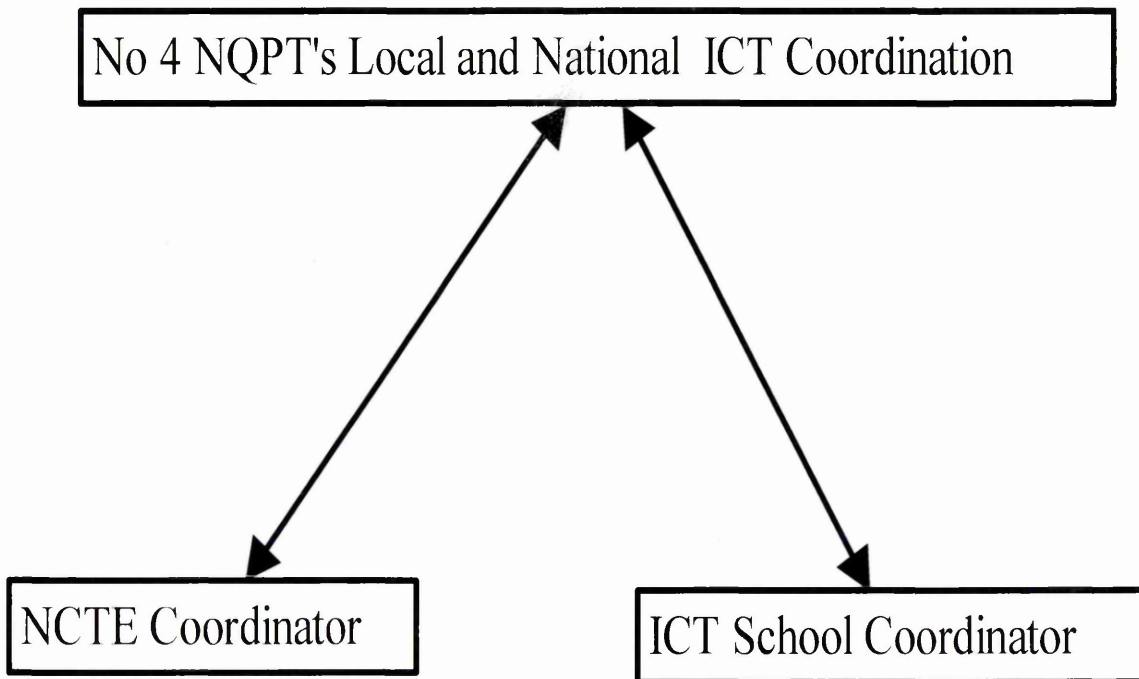
Theme two delves more deeply into their thoughts on teaching and learning with ICT, their opinions on the future and importance of ICT as they see it and what, if any, effect ICT has on their teaching style.

Theme Three: NQPTs: ICT School and Community



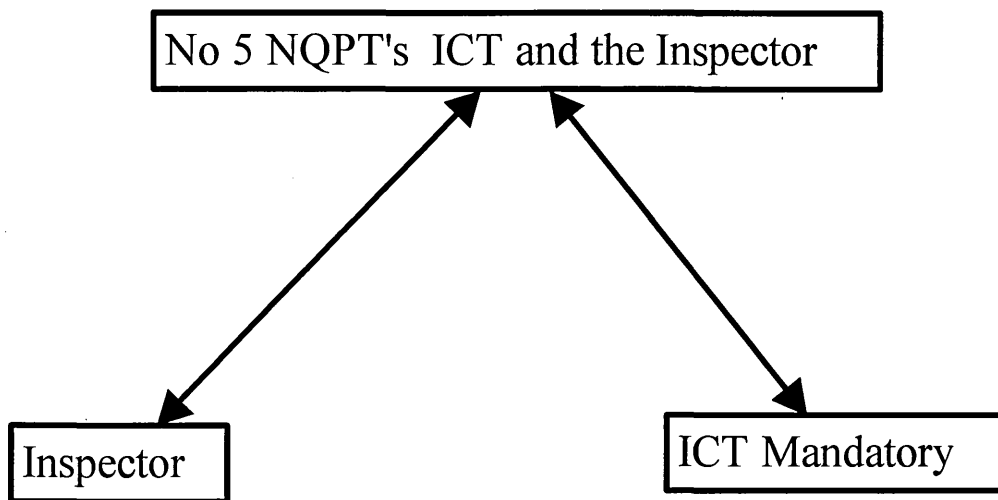
Theme three explores the role of the school and the community, including the parents, regarding ICT and the NQPTs. In particular, it examines how the principal and the ICT school policy act as supports or barriers to the use of ICT by NQPTs.

Theme Four: NQPTs: ICT Local and National Co-ordination



Theme four considers ICT co-ordination both at school level and national level and how it impacts on the NQPTs in relation to their use of ICT. The national ICT service is managed by the National Centre for Technology in Education (NCTE) and is based in local Education Centres throughout the country. The NCTE employs twenty-one full-time ICT co-ordinators to support teachers in the integration of ICT into teaching and learning.

Theme Five: NQPTs: ICT and the Inspector



Finally, theme five assesses the role of the DES school inspectors regarding ICT and NQPTs during the probationary year and questions whether ICT should be mandatory for NQPTs during their initial teaching years.

3.14 Summary

Chapter Three introduced and defended the research methodology and methods chosen for this study. The sample was described and justified along with a description of the analysis process. The final themes were introduced based on the original coding selection. The data from the five themes are presented in Chapter Four.

Chapter Four

Chapter four presents the data of the five themes outlined and discussed in Chapter Three. The themes are NQPTs and

- Personal Background;
- Teaching with ICT;
- ICT School and Community;
- Local and National ICT Co-ordination;
- ICT and the Inspector.

Analysis and discussion on the data will be presented in Chapter Five.

4.0 Theme One: NQPTs Personal Background

This theme discusses the participants' early interest in teaching, their role models, their interest in ICT, their experience of life as a student teacher using ICT and their laptop for teaching practice, the ICT elective while in college, ICT in-service and teaching in general at present. Details of the schools and the ICT facilities are presented in Appendix D.

4.1 Participants

Thirteen participants were interviewed during this research process. The participants were newly qualified primary teachers and have been teaching from between one and four years. They are all in full-time permanent teaching. They are teaching in a variety of settings ranging from small (two teacher) rural schools to large urban schools with over thirty teachers in both mixed and single sex schools. The group had twelve females and one male. This is comparable to the ratio of male to female primary teachers in Ireland. All but one of the participants had teaching as their number one choice on their CAO application form when completing secondary school. The CAO (Central Applications Office) is where students apply for college places having completed their Leaving Certificate Examination. The maximum points possible are

600. Primary Teaching usually requires 465 points for entry to College. Contrary to Hargraves statement that *the attractiveness of teaching as a career among actual and potential new recruits has been fading fast*' (Hargraves 2003, p.160), in Ireland thousands of young highly intelligent students apply for teaching every year. The participants' details are presented in no particular order.

4.1.1 Participant 1. Aoife

Aoife, 24 years, graduated in 2002, has been teaching full-time for two years. She took a year out to do some travelling. She is teaching the infant class in an all girls' disadvantaged school in a large city. Her choice of career was influenced by her mother, a principal teacher in another school in the city. Her mother taught Aoife while in fourth class and Aoife was very impressed by the style of teaching used by her mother. All through secondary school all she ever wanted was to be a primary teacher. Aoife's view of teaching has changed since she began teaching. She finds that there is an amount of paperwork in the job, in particular in relation to accountability. She feels her style of teaching reflects the way she was taught herself rather than any thing she learned or saw while in college. She finds the children in her class are unwilling to get down to work and lack the concentration that her age group seemed to have when she was a pupil in school. Her interest in ICT began when she was in primary school and she had access to a computer at home from an early age. While in secondary school she completed a course similar to the European Computer Driving Licence (ECDL) and is presently completing a Masters in ICT in Primary Education. Aoife had some experience of using ICT during her final teaching practice and suggested the school had a positive attitude towards ICT, however, her Teaching Practice supervisor made no comment on her use of ICT. Aoife's comments on the ICT elective and laptop programme were very positive.

4.1.2 Participant 2. Gretty

Gretty, 25 years, has been full-time teaching for four years. She teaches 1st class in an all girls' school in a large town. This school is designated disadvantaged thus giving it more resources and smaller classes. Gretty's interest in teaching began when she completed a work experience programme in a primary school during her fourth year in secondary school. Her mother also had an influence, in that she was involved in voluntary work with young people through a local youth club. She is very happy in her choice of career and feels it is a very worthwhile position. Gretty attended a two teacher primary school in her youth and a larger school in her later years. She feels that the teachers in the two teacher school employed modern approaches to teaching in comparison to the larger school. She bases her own teaching style on those early teachers using group work and lots of activities. Gretty's interest in ICT began in the home. She used technology in secondary school to publish the school newspaper. ICT was not an issue during her final teaching practice but her laptop was used to prepare her schemes and worksheets. Gretty agreed that the laptop programme facilitated her use of ICT in her first year of teaching. However, she felt the ICT elective needed more real life examples of ICT classroom use. She suggested school visits to observe an actual ICT class in operation in a computer lab. Gretty has not undertaken any further in-service in ICT.

4.1.3 Participant 3. Deborah

Deborah is the first of two young principal teachers in this study. At age 24, and teaching for three years, Deborah is principal of a three teacher mixed rural school. Many of the children are from a farming background but with an increasing number of urban children attending because of the low numbers of children per class and

individual attention given to the children. Her interest in teaching goes back to her early childhood. All she ever wanted was to be a primary teacher and it was number one on her CAO application form. Her family and teachers had an influence on her choice of career. Deborah's interest in ICT began in College. She had no prior experience of using ICT at school or at home. Deborah completed one in-service course on ICT and administration. She found that she knew most of the material covered during the course but thought it might be useful for her role as principal. She completed an MA in history last year. Deborah finds her teaching methods are affected by teaching in a multi-class setting (2nd class to 6th class) and being principal teacher of the school. Deborah has negative memories of ICT during Teaching Practice. She was never encouraged to use ICT and in fact it would have been seen as hindrance resulting in a lower grade. While agreeing that the ICT elective was useful, Deborah recommended that the course needed more input on using ICT with children as well as skills training.

4.1.4 Participant 4. Cora

Cora teaches in large urban school. The school teaches all subjects through the medium of the Irish language. This type of school is known as a Gaelscoil. Teachers working in these schools must have a high proficiency in the Irish language. Parents send their children to this school in order to gain a fluency in the Irish language. This fluency will help the children when applying to secondary school. The management of this school is different from the standard school in that the parents have more of a role in the running of the school. Cora, age 25, has been teaching full-time for four years and is presently teaching 6th class, mixed, boys and girls. She was a member of the first cohort of students to participate in the laptop programme in College. Her role

models included her parents, both teachers, and a teacher she had in her final year in primary school. Cora's interest in ICT began in the home and continued through secondary school and on into College. Cora was offered and accepted the position of ICT Co-ordinator in the school last year. This post is recognised by the DES and includes an increase in salary of €3595 per annum. Cora participated in a number of ICT in-service programmes since graduating but finds them of little use as she had mastered many of the skills while a student in College. However, since taking up her post as ICT co-ordinator she has undertaken a course on networking. Cora enjoys her work but found the first year difficult in particular in dealing with the parents. Cora had no opportunity to use ICT during Teaching Practice but did use her laptop for lesson note preparation. Her comments on the ICT elective and the laptop scheme suggests that more emphasis be placed on ICT lesson planning and scheme preparation.

4.1.5 Participant 5. Catherine

Catherine, 23 years, is the second young principal in this study and teaches in a small three teacher all Irish speaking boarding school (4th to 6th class) attached to a large secondary school. The school is a feeder school for the all Irish secondary school and has children from all over the country. Her interest in the Irish language and the influence of a German teacher in secondary school spurred Catherine to become a primary teacher. Catherine has difficulty juggling the role of principal and class teacher. She finds the parents and children are very demanding and that as a teacher she does not get the recognition of a professional. She feels the teaching profession, in general, is losing the respect of the community. Catherine's interest in ICT began in College. Prior to that, she had very little experience of using ICT. Catherine has not

undertaken any in-service in ICT since graduating but teaches Irish at Summer College for students. Catherine did use her laptop for Teaching Practice preparation and integrated ICT into her English writing lessons. However, she received no positive feedback from her supervisor or class teacher. In relation to the ICT elective, Catherine felt that some time should have been devoted to computer maintenance. As ICT co-ordinator and Principal, Catherine feels under pressure to have all the ICT equipment working properly in her school.

4.1.6 Participant 6. Brendan

Brendan, 24 years, is the only male participant in this study. He teaches infants to 2nd class in a two-teacher rural school. The school is set in a very rural setting, however many of the children are brought from neighbouring towns because of the small numbers in the school. Brendan's interest in sport, family influence and job security all played a part in his career choice. Brendan was the only participant to mention job security as a reason for joining the teaching profession. Is it co-incidental that he is also the only male in this study? Brendan believes his style of teaching is influenced by the way he was taught in primary school. Brendan's interest in ICT began in secondary school, where he edited the school newspaper during his fifth year. He used his laptop during his final teaching practice but received no favourable mention from his supervisor. Brendan believes that teaching has changed for the better since his days in school with more emphasis on visual stimulus rather than rote learning. Brendan has undertaken one summer course on web design since graduating.

4.1.7 Participant 7. Elayne

Elayne, 24 years of age, has taught 2nd class in a large city all girls' senior school for the past three years. The school is a middle class school attracting children from financially comfortable families. Her interest in teaching comes from her family as her father is a primary teacher and as a child Elayne enjoyed visiting his classroom and writing on the blackboard. Elayne's other role model was her teacher in seventh class. (Some primary schools in Ireland had a seventh class. Children, too young to move to secondary school, remained in the primary school for a further year in seventh class.) This highly motivated teacher changed Elayne's attitude to school for the better. Elayne's interest in travel was also a motivating factor in her choice of career. The holidays in the teaching profession offered her the opportunity to continue a passion she has had since childhood. Elayne's first taste of ICT came in seventh class in primary school and later from her father's interest in promoting ICT in his own school and later when she started College. Elayne, along with many of the participants in this study, had very little experience of using ICT at secondary school. Along with six of the participants, Elayne feels under pressure with the amount of paperwork and accountability involved in teaching today. Elayne has not participated in any further ICT in-service but has undertaken further study in Mathematics and hopes to complete her Masters in Maths within the next few years. The summer courses on offer do not appeal to her and also they would interfere with her holiday plans. Elayne had a very positive experience of using ICT and her laptop during her senior teaching practice. As her supervisor during Teaching Practice, this researcher observed a number of lessons where Elayne integrated ICT in an imaginative way. Along with a number of the other participants, Elayne found the ICT elective useful but felt a little time should be spent on troubleshooting.

4.1.8 Participant 8. Mary

Mary, 23 years of age, has been teaching for two years. She was a temporary teacher for one year and is now in a permanent post in an all boys' large city school. The school is situated in a middle class area and attracts pupils from all over the city. The school is a feeder school for a prestigious secondary school, thus making it an attractive location for parents wanting their children to move on the secondary school next door. Mary's interest in teaching was influenced by her father, a deputy head in another city school, and by a teacher she encountered while in fourth class. Teaching was her first choice on her CAO application form. Her interest in ICT began in secondary school, spurred on by a maths teacher with a keen interest in ICT. Mary had a negative experience of using ICT while on teaching practice in that her supervisor thought she was using the cut, copy and paste facility to prepare her notes. However her overall experience of ICT while at College was positive, using her laptop and designing her own website. Mary has not undertaken any further ICT in-service since graduation but has participated in a mentoring programme which she found to be of immense benefit. She hopes to complete her Masters in ICT in Education within the next few years. Mary sees herself as a very active teacher, particularly with the Junior Infants, and firmly believes in a child centred approach to teaching and learning. The child's happiness is number one on her list of priorities.

4.1.9 Participant 9. Linda

Linda, 25 years of age, has been teaching full time for four years. This is Linda's second school. She taught for a year in a designated disadvantaged school in a small town in the West of Ireland. Her present school, an all boys' senior school, is situated

in a large town in the North West of Ireland. The school is in a middle class setting and has a high number of Brazilian children on the register. Brazilian immigrants work in the local meat industry. At present Linda is a resource teacher but has experience of classroom teaching. Linda had planned to become a speech therapist but on advice from her teachers opted for primary teaching and placed it number one on her CAO application form. Her interest in teaching was sparked by a teacher she had in primary school and her interest in languages, Irish and German. Linda had no interest in technology or computers as a child or all the way through school. Her parents suggested she get involved in the laptop programme in college in order to facilitate preparing assignments and teaching resources. Linda did not use computers for teaching practice other than to prepare her lesson notes and resources. Her supervisor did not mention ICT during the practice. Linda enjoyed the ICT elective and felt her knowledge of web site design and technology in general helped her gaining employment. Linda is presently the unofficial ICT co-ordinator within her school with responsibility for managing the computer lab and software library. Linda has taken in-service in ICT and resource teaching as well as completing Masters in ICT. Linda feels that children in her school have a very short attention span and this can cause problems when trying to encourage the children to tackle difficult problems. With both parents working, Linda feels that the children are left to their own devices and are not capable of working on their own initiative. Linda sees her style of teaching as child centred and will vary her methods to suit the child's learning style.

4.1.10 Participant 10. Noreen

Noreen, aged 24, teaching for 3 years, teaches 5th class in a large mixed school in a middle class area of a large city in the South of Ireland. This is her second school as she worked in a temporary position for a year prior to taking up this full-time post. Teaching was her first choice on her CAO, but her real loves were nautical science and design. Owing to a minor medical ailment and lack of sea legs she was unable to pursue those careers. Her voluntary work with the scouting movement attracted her to primary teaching and she is happy in her job as it gives her the opportunity to continue working with young people. Furthermore, a teacher she had in primary school, with an interest in the environment and science, also played a part in her decision. Unlike many of the other participants her interest in ICT began in secondary school. Here she took technology courses and went on to work part-time in the local library assisting customers with web searching and e-mail projects. Noreen used her laptop during her final TP but did not have access to school equipment and ICT use was not commented on by her supervisor. Noreen undertook some in-service on digital video production and hopes to do some networking courses. She has no plans to take on postgraduate work. Noreen finds the pace of life in the city school a little hectic and confining in that she cannot take the children out on nature trails without parental consent forms and also feels the curriculum is too demanding with its emphasis on entitlement. She employs group work and places an emphasis on oral language during her teaching.

4.1.11 Participant 11. Lucy

Lucy is unique in this study as she was a mature student in College. Lucy did not reach the required standard at her final secondary school exam to get a place in

teacher education. Along with the lack of points, Lucy had a pass in her final Irish language exam. Lucy entered the accounting profession but after a number of years she returned to school, repeated her exams and undertook an honours course in Irish. Second time round, Lucy was successful and was given a place in College as a mature student. Her interest in teaching was fired by witnessing a weak teacher during her own school days. She was adamant that she could do a better job if given the opportunity. Lucy's interest in ICT began at an early age. Her father was a typewriter salesman and Lucy was his assistant, showing the various products to the customers. Eventually she moved on to computers and completed courses on various software business packages. Lucy successfully integrated ICT into her teaching during her Teaching Practice. However no mention of ICT was made by any of her supervisors during her practice. She completed her practice in her present school and believes that she was employed here as a result of her skills in ICT. Lucy's school is a rural school set in a very upper class area. She teaches Junior Infants and has been appointed the school permanent ICT co-ordinator attracting an add-on to her salary of €3595 per year. Lucy agreed that having a laptop in College improved her ability to prepare for all aspects of teaching. Lucy believes that children today are more open and require new and exciting methods of teaching to satisfy their needs. With her vast experience of computers, Lucy doesn't see the need to undertake further in-service for the present. However, her role as ICT school co-ordinator ensures she keeps up to date with the latest technology available to schools.

4.1.12 Participant 12. Denise

Denise, aged 24, has been teaching for three years. She teaches 1st class in an inner city disadvantaged school with a very high proportion of non-nationals. Of the thirty-

three children in her class, eleven are non nationals with very little English and attend a special language class during the school day. Many of the children in the class suffer from various forms of ADHD, giving Denise a very tough assignment. Denise's interest in teaching comes from family, in that she had a number of aunts in the teaching profession and by a primary teacher that taught her in junior infants and fifth class during her school days. Teaching was her first choice on her CAO application. A home computer and some work on LOGO in primary school introduced Denise to the world of computers. She continued this interest by participating in the laptop scheme in College. Her teaching practice class did not have access to computers, however, she used her laptop for preparation and resource production. Her TP supervisor did not encourage ICT and at times was fearful that Denise was using her laptop to cut, copy and paste material. The ICT Curriculum Option proved to be a useful addition to Denise's qualifications as her new principal is encouraging her to design the website for the school. While praising the laptop programme, Denise suggests, that as students, they should have been given the opportunity to work with children in a real classroom setting. With her experience in using ICT, Denise does not feel it is necessary to undertake further ICT in-service however she has taken courses in music, swimming and science. With a very challenging class, Denise employs an active method to work with the children and feels under pressure to ensure every resource is available for the children. She also voiced concern in relation to parental involvement and the constant need to keep the children entertained. Denise agrees that she is contented in her chosen profession and that it gives her the opportunity to express her talent for music by working with the school choir.

4.1.13 Participant 13. Vivienne

Vivienne, the final participant in this study, has been teaching full-time for two years. Aged 23, Vivienne is teaching in a two teacher rural school with forty eight children in the entire school. Vivienne teaches infants through to first class and has twenty six children in her class. The area surrounding the school is rural and all the children come from a farming background. Discipline is not an issue in this school. Broadband has been installed and the school has five computers in each classroom. As a professional child minder, Vivienne's mother played a role in her interest in primary teaching. Playing with and entertaining children was constantly part of Vivienne's life right through to end of secondary school. Therefore primary teaching seemed to be the natural choice of career for Vivienne. Teaching was number one on her CAO application. Vivienne's time in primary school was influenced by what she classed as a negative role model. Vivienne hopes her teaching today does not reflect the methods employed by this teacher. While this teacher did her work she was very strict. Vivienne's interest in computers began at home but deepened with the purchase of her own personal laptop in College. Vivienne used her laptop during teaching practice but received neither a negative or positive comment from her supervisor. Vivienne recommends that the college should spend more time on discussing ICT classroom management, specifically related to smaller schools with no access to a computer room. Having completed the ICT elective in College Vivienne does not feel the need to undertake further ICT in-service but has taken on a Masters programme in a nearby university. She feels now is the time to continue with her studies as later she might not have the time or energy. She also enjoys the company of other students as teaching in a two teacher rural school can be a lonely experience. Teaching in a multi-

class setting, demands that Vivienne adopts an active, group orientated teaching style. She finds it difficult to integrate ICT in this setting.

4.1.14 Summary of evidence

Theme one described the participants, their interest in teaching and ICT, their experience of using ICT during teaching practice, the ICT elective and laptop scheme plus some discussion on how they view teaching today. All but one of the participants had primary teaching as their first choice on their CAO. Parents, family and teachers were seen as role models for their decision to join the teaching profession however it is interesting to note that only one participant spoke of the long holidays as being an incentive while the only male in the study made reference to job security. Overall the participants are happy and contented in their chosen career. Hammond (2001) discussed comparable findings from his study on NQTs during their first year of teaching. All are trying to successfully integrate ICT into their daily work in the classroom however multi-class settings and the new phenomenon of non-nationals in Irish classrooms are areas of concern in common with NQTs in the UK (TTA 2005). All participants agreed that the laptop scheme in College helped them to gain experience in using ICT but the majority felt the College could do more to encourage ICT during their final practice. Comments on the negative attitude of teaching practice supervisors to ICT use were echoed throughout the interviews with some supervisors accusing students of using the cut, copy and paste facility in a dishonest manner. Lack of facilities in teaching practice schools along with a lack of training in classroom management of ICT were seen as barriers to ICT integration. In-service in ICT didn't seem to be a high priority among the group but six are undertaking further study to Masters level. The ICT elective and the laptops seemed to have prepared

them for all technical aspects of ICT use in the classroom but more needs to be undertaken on classroom management. Six members are either official or unofficial ICT co-ordinators in their schools, giving further evidence of the value of intensive training in ICT at pre-service level. The data suggests that these young teachers are open to change and are utilising modern methods of teaching. However two participants seem to favour the traditional instructive method of teaching. Both acknowledge that the influence of teachers they had in primary school plays a role in their teaching style. (See Appendix I for a full account of the participants' thoughts on this topic)

4.2 Theme Two: NQPTs Teaching with ICT

Theme two discusses the participants' thoughts on ICT teaching and learning, their teaching style, the importance of ICT and a brief look at the future and ICT. Data for this section is based on the interviews and the researcher's own classroom observation, during school visits. Seven ICT lessons/classes were observed, ranging from Maths in the infant classroom, creative writing in first and fifth class, music in second class, Irish and geography in fifth class and web design in sixth class. Six of the observations took place in computer rooms and one observation in a one computer classroom. Ten of the settings have LCD projectors while five of the classes utilised the Internet with broadband during their lessons. The observations will be discussed in more detail later in this chapter. Further evidence on ICT integration was gathered through interviews with the remaining six participants, see 4.3.4 below.

4.2.1 ICT Teaching and Learning

This section examines the thoughts of the participants in relation to the barriers to integrating ICT, the case of the computer room versus the one computer classroom, examples of ICT integration in use in the classrooms and using the LCD projector and furthermore presents some solutions to the problems they encountered.

4.2.2 Barriers to integrating ICT

The four main barriers to ICT integration highlighted during study with NQPTs relate to classroom management, including the issue of large numbers in the classroom, preparation, technical issues and time. Only one participant made reference to the lack of up-to-date computers and in that particular case the school was awaiting the

arrival of new computers to complement the introduction of broadband. Other issues that arose include curriculum overload and lack of space in smaller schools

Aoife, Paragraph 85, I think classroom management is one of the most difficult areas of ICT.

Brendan, Paragraph 77, it's a management thing.

Denise, Paragraph 94, It is difficult and really the difficulty is caused by the management of ICT in the classroom.

Noreen, Paragraph 75, Class size is also a big thing. However when ICT works it is great and all the preparation is worth it.

Catherine, Paragraph 159, I used it a bit last year but it takes a lot of preparation.

Deborah, Paragraph 97, I had a computer in the classroom but I didn't have time to use it.

Gretty, Paragraph 79, time in getting material prepared, you do have time within the school day to use it but it's the time needed to prepare.

Vivienne, Paragraphs 81, Last year we were talking about getting a large TV for each room and a scart lead, we thought that would be good way of doing lots of things like science but because of the money we spent on the resurfacing the playground we haven't the money for the televisions.

Mary, Paragraphs 166-168, I love putting on music for the children. We don't have a big classroom but we move back the chairs and play musical chairs. But on any given day the computer itself might freeze and you have to switch it off and do the scan disk and everything else, so that's one difficulty in that it is so unpredictable.

Deborah, one of the teaching principals has further issues to contend with when trying to integrate ICT into her daily routine.

Deborah, Paragraph 135, It's funny being a principal and teacher at the same time, my role is really a teacher, I suppose if I was an administrative principal I'd be putting a way more emphasis on ICT with the other teachers but because I have responsibility for my own class and I spend so much time thinking about my own class, I probably don't give them enough guidance.

4.2.3 The Computer Room versus the One Computer Classroom

Ten of the participants used and preferred the computer room to the one computer classroom. Reasons given range from ease of use for whole class teaching to ensuring all children got equal time at the computer. The addition of LCD projectors in the computer rooms made it easier for the teachers to motivate and enthuse the children.

Cora, Paragraph 123, I'd prefer the computer room and do a lesson in the computer room.

Elayne, Paragraphs 104-106, I'd go for the lab, because the children would all have their own computer, the children use the computer in the classroom if they missed out in the computer room, but generally speaking the classroom computer is not used during the day.

Gretty, Paragraph 161, The lab, because in the room the children who finish early get a chance at the computer first, whereas in the lab they are all there getting their chance.

Vivienne, Paragraphs 188-191, Well, every child will get the same turn at the same time and you should have the proper equipment, it should make it a lot easier to have equipment for everybody, we have people looking for PE halls, why not computer rooms.

However a number of participants agreed that having both the computer room and access to a computer in the classroom would enhance the learning opportunities for the children and assist ICT integration.

Cora, Paragraphs 251-253, I would hope that all schools would have a computer room, even though I read the latest trends are moving back to having the computer in the classroom but maybe both would be the best and that every body would know what they are doing.

Linda, Paragraphs 128-130, Well I can see the advantages in both. What I like about the lab is, because I was taking 5th class as well, just getting them started in the lab, the projector in the lab is great, because you can do it and they can literally copy it step by step and that's great.

Mary, Paragraphs 110-125, The ideal is the two, I find in the room like I can put them on in the morning when they are in early and we have plenty of games.

Gretty, Paragraph 44, Yes, some of the children use it, [the classroom computer] there is a girl in the class and she was out all week and she needed to complete her slides for the work in the lab, and I use it for early finishers to complete other work that may be loaded on the PC at the time.

While the majority of the participants preferred the computer room one teacher had an opposing view.

Aoife, Paragraph 85, I felt if we had a computer lab it would solve all problems and now that I'm in a school with a lab it hasn't solved everything.

Aoife highlighted an issue that may face many NQPTs. As the youngest teacher in the school she was allocated the oldest computer for her classroom. The school had a modern computer room but Aoife found it difficult to manage the infant classroom in this setting.

Aoife, Paragraph 85, The main difficulty is equipment, the computer I have in my class is the oldest in the school, I'm nearly sure , there are other PCs in the school that have DVD players and are connected to screens, I was the last teacher in so I have to work my way up, I'd prefer if I had two or three computers in the classroom, it would be much easier to coordinate as well as having the computer lab. In any school I taught in previously the main issue was equipment and I felt if we had a computer lab it would solve all problems and now that I'm in a school with a lab it hasn't solved everything , because there is so much classroom management with infants in the computer lab, it is expensive equipment the children need to be settled and calm everything needs to be very structured and very controlled so I think classroom management is one of the most difficult areas of ICT.

In contrast to Aoife's problem, I observed another junior infant class in a computer lab where the teacher had no difficulty in managing the younger children. However, this setting was in an upper middle class school where the young children had access to computers at home from an early age, while Aoife's school is a designated disadvantaged inner city school and the children did not have access to ICT at home. This raises the issue of equal access for all.

4.2.4 Examples of ICT Integration from observations

Data from observations and interviews suggests that most ICT integration occurs in SESE (Social, Environmental and Scientific Education). Examples of music, maths and language were also observed. All observations lasted forty five minutes. A FIAC (Flanders Interaction Analysis Category) framework recording instrument was used to record the observations. (See Appendix F)

1. Observation with Lucy: (Upper middle class large mixed rural school). Twenty two infants (age 5) in school computer room with access to broadband and LCD projector. All computers networked with software on central server. The children shared the PCs and used headphones to eliminate distracting sound from software. Subjects included language, word recognition using PowerPoint presentation prepared by class teacher. Children displayed their own Big Book production. This involved some creative writing and downloading appropriate images from the web. The children worked independently on a maths programme on number recognition. The session closed with a piece of software on matching musical instruments with sounds. At all times during the observation the children shared tasks and on completion moved on to another space and played with building blocks.

2. Observation with Brendan: (Two teacher middle class mixed rural school). Six children from second class, (age 8) worked in a small computer room with five computers and one laptop, LCD projector and standard Internet access but waiting for broadband to be connected. The lab doubled as staff room and school office in a prefab in the school yard. The subjects in this lesson were English creative writing using Clicker software and a music session where the children composed their own tunes using '*riffs*' (short musical passages) supplied by the software. The children worked independently and interacted with each other throughout the lesson. The teacher acted as guide and facilitator during the lesson. The children had access to computers at home.

3. Observation with Gretty: (Large urban all girls disadvantaged school) Thirty two from first class (age 7) worked in a large computer room with sixteen networked

computers, LCD projector, broadband access and software on central server. This was the only school that had a full-time ICT teacher on staff. This teacher acted as ICT co-ordinator and managed the entire system for the school. This is an unusual setting as very few schools within the country have access to a full-time ICT teacher. The teacher worked closely with the class teacher in planning a programme for the year. In this session the children were completing a creative writing session using PowerPoint and the www to download images. The class teacher, the ICT co-ordinator and the SNA (Special Needs Assistant) moved through the room assisting children as needed. Peer tutoring was encouraged during this lesson and children were free to collaborate, discussing problems with their classmates.

4. Observation with Cora: (large urban mixed Gaelscoil). Twelve children from fifth and sixth class (age 11 and 12) participated in this web design session. The computer room was in a prefab in the school yard with eighteen computers, LCD projector and access to broadband. The lesson was delivered through the medium of Irish. The children had no difficulty in using technical terms in Irish. The first half of the lesson was teacher led where web design skills were taught using MS FrontPage. The children used the web to gather animated gifs to include in their personal websites and interacted freely with each other throughout the second half of the lesson. The teacher gave individual attention where and when needed.

5. Observation with Catherine: (Small urban senior mixed Gaelscoil). As a teaching principal Catherine has difficulty finding time to integrate ICT. The observation took place in the school computer room. Twenty two children from sixth class (age 12) shared thirteen PCs. The LCD projector was not in use but was

available. The children used MSWord to complete an Irish poetry lesson. The school had access to broadband but it was not used during this session. The children worked in pairs but lacked direction as the lesson had constant interruptions from children, parents and other teachers seeking advice, permission and a number of administrative queries. Catherine was very frustrated owing to the many interruptions during this lesson.

6. Observation with Noreen: (Large upper class mixed urban school). Lesson took place in very well equipped school computer room. The room had eighteen PCs, one laptop, LCD projector, four printers and a scanner. The room was networked and had access to broadband. Twenty three children from fifth class (age 11) participated in two lessons. The first lesson was a very ingenious Irish language lesson where Noreen used PowerPoint to teach basic grammar skills. The children reacted positively to this lesson. ICT is seldom used in this way. During the second lesson the children worked in teams completing a local history project using MS Publisher. The teacher acted as guide and facilitator during the second lesson. Children saved their work on individual discs and handed up the discs at the end of the lesson.

7. Observation with Denise: (large inner city disadvantaged mixed junior school). This was the only observation within the classroom. Thirty children from first class (age 7) shared one PC at the back of the classroom. The PC in use was a KIDSMART console donated to the school by IBM, Ireland. The computer had a collection of early childhood software pre-loaded. The software was based on language, maths and science. The children had free choice and worked in pairs. This was a very challenging class as ten of the children were non nationals with very little

English. Denise used the software to work on basic literacy skills. During the day a number of children are withdrawn individually by an SNA (Special Needs Assistant) and work on language acquisition on a computer in the library. These children did not have access to computers at home.

4.2.5 Evidence of ICT Integration from interviews

Aoife, Deborah, Elayne, Mary, Linda and Vivienne were unable to arrange an observation session owing to the timing of the visits. Some of the classes were infant classes and had finished early, while Deborah is a teaching principal in a very small rural school and lacked the facilities and Linda is a learning support teacher but discussed ways she integrated ICT in previous classes.

Aoife, Paragraphs 78-80, We have a structured time , every class gets at least an hour, but you can take more, a week in the computer room downstairs, so we have specific software on the computers for infants for getting use to desktop skills and mouse control, this takes about three months, getting use to software, getting use to co-operating with a partner, getting use to working on your own, with Junior Infants I did a slide show on the new words they have in their readers. I have one computer in the classroom and I have software for word and number recognition and general maths concepts so during structured play which is for twenty five minutes every day I have two sets of children that go up, that's four children everyday, in the morning time so I usually have the computer on in the morning and I have a rota so the children know their turn to go on.

Elayne, Paragraphs 108-110, I start off with simple skills in September , like filing and printing and basic typing skills and the use of the mouse, clicking and dragging and then I use it with Maths for the Clock and Time and then I was doing legends and I was on a site for that so it does tend to link in a lot with I'm doing in class, we use digital cameras and take their photos and they put their photos into their cards, its something a little different for them at that stage.

Linda, Paragraphs 114-116, I found it great, mostly in terms of language [English], encouraging them to read, and we made up books about themselves and we scanned images of themselves and we put it in the library and it was always gone and always read and you could see children that wouldn't read

taking out this book, this was 6th class, it was great for the early finishers because they could go up and continue with something they were doing.

Vivienne, Paragraphs 81-83, I use the computers for play for the juniors and then in first class we do a little word-processing with them for their English and I show them how to use the basics, they are just beginning and they use it for their editing and redrafting of their written work.

The data suggests that the NQPTs are integrating ICT into their teaching, albeit on a limited scale, in some settings. Both teaching principals had difficulty with time but all remaining participants were using ICT in some form as a teaching and learning tool in most subject areas.

4.2.6 LCD Projectors in teaching and learning

Eleven sites have access to LCD projectors. One site did not use this facility as teachers were fearful they might break it. Denise teaches in a very challenging environment and has experience of using the LCD projector but will not use it in class.

Denise, Paragraph 137, Well we have the LCD projector to put the large pictures on the wall, although personally I have never used it. I'm afraid to use it in the class as it cost so much and I'm afraid something might happen it in the classroom.

The remaining ten teachers use this resource in various ways. These are some of the responses to the question relating to the LCD projector.

Aoife, Paragraph 80, We have a data projector in a central location and I bring it in to my classroom and I hook that up the class laptop and I PowerPoint material for Gaeilge and letter recognition exercises.

Catherine, Paragraph 159, I have one here but I don't use it as much as I should. I used it a bit last year but it takes a lot of preparation. I was using it for history and the children were using it for their PowerPoint presentations

Cora, Paragraphs 242-244, No, it was in the school for years but nobody was using it so I came along and started using it and it was on a stand in the computer room originally, I used in my own class with PP presentations, they [the children] had to do a programme and present it to the class, they really enjoyed that work, it was great and it gave a new dimension instead of writing three pages on the Normans they made a PP presentation, they had to choose a famous person, research on the web and then I used my time in the computer room to prepare the work and then use the projector in the classroom, they loved it, I'd love to have a projector full-time in my room, I'd spend half the day using it.

Elayne, Paragraphs 61-63, every computer has its own LCD Projector and that was put in place in the last year and a half, since I have my own computer and projector ICT is much easier to use.

Gretty, Paragraph 73, More so in SESE [Social Environmental & Scientific Education] when I'm trying to get their attention, they love it. As the school won the FIS competition [Film in Schools] we have another data projector and I hook up that projector to my laptop about once a week for a lesson in SESE, last week we were doing senses and I had sound effects downloaded from the web, it was very successful as they tried to figure out the sounds. It really got them going.

Mary, Paragraph 257 My laptop. My life would be over without my laptop, and my projector, that's available to me whenever I need it and the projector for me is like the big TV screen I used last year, it is an extension and accessible to everyone.

The responses highlight the value of this piece of ICT equipment and should send a message to the authorities that if available the NQPTs will make the most of it in their classroom practice.

4.2.7 A solution to the problem

Two participants, Denise and Elayne, have found a novel solution to their ICT problems. They utilise their class SNA (Special Needs Assistant) to help with ICT. The SNA is allocated to work with an individual child with special needs in the classroom and is not obliged to undertake any further administrative duties within the classroom.

Denise, Paragraph 89, I use my SNA to go and work with the group at the computer while I work at the top of the classroom.

Paragraph 155, The SNA's are very helpful when I'm using the computer. They fix any minor problem and this saves me time.

Elayne, Paragraph 63, Yes, we are very fortunate in that we have an SNA who is very good with computers and she will always give us a helping hand.

However not all classrooms have SNA's but where one is available it might be helpful if the SNA's were given official permission to help.

4.2.8 NQPTs and teaching style

A variety of teaching styles and methods were observed and discussed during this study. The data suggests that the NQPTs style of teaching was influenced by both the teachers they had at school and on occasions by their own parents, who taught them in school. ICT does not seem to have an influence on their teaching style.

4.2.9 Teaching and learning with ICT

This topic drew a multiplicity of responses from the participants. Cora, Deborah and Elayne put emphasis on basic ICT skills training for their children

Cora, Paragraph 162, I'd spend half the time developing their own skills.

Elayne, Paragraph 110, I start off with simple skills in September, like filing and printing and basic typing skills and the use of the mouse, clicking and dragging.

Deborah, Paragraph 102, they would learn basic skills.

Deborah and Mary propose that ICT is not having any major impact on their teaching style while Vivienne is still unsure.

Deborah, Paragraph 29, The fact that I am very competent using all different sort of things that has really helped me in teaching a multi-class situation preparing things quickly and getting things ready as basically an admin tool but with the children, no I wouldn't say so.

Mary, Paragraph 222, I wouldn't say it has changed it too much but you can incorporate much more into it, especially at this stage because you have to change tack and be flexible

Vivienne, Paragraphs 129, I would like to use it more, it's a more modern approach, and the children are more active if you can use it, in some ways ICT changes my style and in other ways it doesn't.

Linda suggests that as young teachers they already use and are influenced by technology so ICT is not changing their style of teaching as they know no other way.

Linda, Paragraph 150, No, not really, you see I didn't have another teaching style, when we come out we are just use to computers, its not like approaching someone who has been teaching for ten years and then they started this, then their teaching style might change but that is our style.

4.2.10 Activity based teaching

Denise, Elayne, Gretty, Lucy and Mary all believe in activity based teaching and learning. This comes as no surprise as all teach children in the junior classes in the school.

Mary, Paragraph 74, I very rarely sit at my desk, I'm always out around with them, I spend most of my days literally on my knees talking to them at their tables being on their level, I don't want to be this huge person above them.

Denise, Paragraph 29, I have a very active class, so when I'm doing time, they make the clock and then learn the time by using this clock. The teaching is very different, the main difference is doing and making and experiencing the things we are doing in class.

Elayne, Paragraph 26, I do a lot of activity work which obviously puts more pressure on the teacher.

4.2.11 The influence of others

Three participants agreed that their style of teaching is influenced by what they experienced while students at school. It is interesting to note that college experience does not get a mention during the interviews.

Aoife, Paragraph 29, When I was doing teaching practice in my mother's school and the door was closed, people use to think it was my mother teaching not me, well we have very similar voices, but I say the same things, I hear myself when I say it, I think I am very similar teaching wise.

Brendan, Paragraph 23, I wouldn't be doing things much different now to them, what I witnessed growing up in school as regards classroom management is similar to what I do here, very little difference between the two.

Deborah, Paragraph 29, Not hugely, honestly, I had nice teachers when I was in primary school, they weren't strict and they weren't all chalk and talk, I wouldn't see my teaching being different from them, I hope I'd be a bit more interesting but not hugely different.

4.2.12 The Importance of ICT

These NQPTs have grown up with technology. However, they had minimal experience of ICT in their own primary school while Brendan, Gretty, Mary, Noreen and Aoife used technology in secondary school. All participants had access to laptops and technology while in College. Therefore how do they, as teachers, view the importance of ICT in primary education? Words such as *pivotal, important, extremely important, enjoy, need, reinforcement, motivation, special needs, challenging, technical world, variety of presentation, research, work in the future* all appear in the interview transcripts. Aoife suggests that ICT should be a curriculum subject.

Aoife, Paragraph 139, I think that the fact there is no curriculum for ICT is one of the things that hinder the full integration of ICT into schools.

Cora shared some interesting thoughts on ICT and primary school. Cora believes that the home and parents should take more responsibility for adopting ICT in everyday life.

Cora, Paragraph 127, I don't see it as an important tool, computers aren't a big deal, they all have computers at home, they all have tons of DVDs, they all know how to use them, some of the children know more than me at this stage, so school isn't the only place they learn, in fact I think they hardly learn anything in school about ICT, its all at home, I expect an awful lot of the work to be typed up at home and if they haven't a printer at home they can

print it out at school , and that's for all subjects so they have to physically sit in front of the computer at home and type it out.

Paragraphs 182-184, *I think we should expose the children to ICT but not take total responsibility for it, home needs to take a huge responsibility for getting a computer and make them [the children] use it, I try to link home and school and get them to do stuff on the computer at home in that its going that way in that everything isn't going to be written on paper.*

Contrary to that argument, Vivienne believes the children are not getting access at home because of the fear they might break the computer and parents may not have the finance to purchase a computer.

Vivienne, Paragraph 120, *I'd say a lot of the children have computers at home but may not be allowed use them and then some of them are big into it, in first class this morning a girl came in with something typed out and she wanted to show it to me , most of the children here are from a comfortable background.*

Full responses to the question on the importance of ICT are available in Appendix H

4.2.13 The Future and ICT

NQPTs have diverse views on the future of ICT in education. Cora, Deborah and Lucy hope that all schools will have a fully equipped computer room and access to a computer in the classroom including laptops. They feel the introduction of a standard curriculum for ICT might give teachers clear direction.

Cora, Paragraphs 251, *I would hope that all schools would have a computer room, even though I read the latest trends are moving back to having the computer in the classroom but maybe both would be the best and that every body would know what they are doing and maybe a curriculum set out say that by second class they should be able to do this and that so that when they come to sixth class you are finishing them off.*

Deborah, Paragraph 198, *I really want to show the children how to do stuff and use ICT effectively , so hopefully over the next three years, the children in fourth class now, by the time they leave school that they will be able to use ICT and that they will a general confidence in using ICT.*

Lucy, Paragraph 205, I'd like to see every child with a laptop on their desk, probably; at the end of this year I'd like to see all 5th and 6th class children able to prepare a presentation for the other classes and even their parents; I'd like to see an LCD projector in every room, broadband, printer and use the www as a normal part of the day, and I would like to have total integration, I think that would be great.

Vivienne is more pessimistic in that she feels the Department of Education and Science will not fund ICT into the future.

Vivienne, Paragraphs 165-167, In reality I don't think things will change that much, I don't think they are going to put the money into it, it's not reaching its full potential, with the new curriculum in-service days they are all recommending new equipment for every subject so I just can't see the government giving extra money to ICT with all the other demands.

Further discussion on ICT and the future will be presented in theme five.

4.3 Theme Three: NQPTs ICT School and Community

This theme presents the data on ICT and the principal teacher, the parents and the community and examines the role of the ICT school policy in relation to NQPTs. Two participants, Catherine and Deborah, are young principals with overall responsibility for promoting ICT within their schools.

4.3.1 ICT and the Principal

All of the participants agreed that the principal played a pivotal role in their success in using ICT in their early years in the classroom. The participants cited the following as the key reasons as to why their principals were successful in integrating ICT into their schools. These were;

- Computer literate;
- Have respect for ICT;
- A hands on approach;
- Openness to change;
- Giving young teachers freedom to experiment;
- Creating a space and time for discussion with colleagues;
- Allowing the school facilities to be used for ICT in-service;
- Providing a mentor in the first year;
- Giving the NQPT responsibility for ordering appropriate software;
- Providing the latest resources;
- Willingness to delegate if not ICT expert;
- Be available to support with technical difficulties.

***Brendan, Paragraph 80,** Yes, definitely, my principal is very supportive of any ICT initiative we have in the school depending on the finance that is available, ,if I need a new piece of software for my classroom she will say just order it and if I recommend a piece of software for her class she will take it on board too and we work with that relation ship and with the learning support teacher.*

***Cora, Paragraphs 144-146,** He helped when we were getting in the broadband, he did most of the phoning, he sourced the technician, he knows more people locally and he knows other schools so he rang the principals with we need this and where should we go.*

Elayne, Paragraph 68, We have a new principal this year, but the previous principal was big into ICT as well, she was ahead of her time, always, if she heard there was another school and the teachers had laptops, she'd say what can we do, she was very much open to change.

Lucy, Paragraph 137, Well, the principal trusted me to write to all the parents to get funding to buy the equipment, she trusted me on what equipment to buy to get this up and running, we sat down and discussed who would give us help in the locality. I was brought into the decision making process all along the way.

Mary, Paragraph 129, This school is very ICT and when I came in and made known my interest in ICT the principal was delighted because he said that some people needed a bit of a shove. The teacher next door is the ICT coordinator and knows he can leave me off, I can set up the programmes and e-mail myself.

One principal, having witnessed the ICT work undertaken by the NQPTs, arranged the classes in her school to free up a full-time ICT teacher for the entire school. This teacher became the school ICT co-ordinator where she designed and implemented an ICT programme for all classes. Here is direct evidence of openness to change and a willingness to give NQPTs the freedom to experiment.

Gretty, Paragraphs 149-151, I would only have seen her role when the lab got going in this school up to then she would have been delighted if she saw their stories printed and posted up around the room, but when she saw what was possible she is all behind us now. There were a few of us in the school, another girl from MIC, so ICT came up at a few meetings and it was decided that we would pool our resources and have a full-time ICT person in the school. ICT was not big when I came here first, only with a few teachers and there was no official school drive at that time. The younger to the middle age are using ICT the most in the school.

Mentoring is viewed as having a positive impact on the NQPTs.

Mary, Paragraph 42, I was mentored, I was lucky because the other NQPT in the school, her mother teaches in the school as well, we were very lucky because we knew the school so well and our mentor was a good friend as well so we got the best of help.

Aoife, Paragraph 99, My mentor, who was the other Junior Infant teacher gave me the software she had used the previous year, she discussed timetabling of the computers, yeah it was like mentoring me in classroom management.

The two young principals had difficulty in finding the time and energy to actively promote ICT within their school. Along with the day to day management of the school these young principals had to teach a class and try and promote ICT. Catherine and Deborah provided the following responses to the question of how being a young principal affected their attitude towards ICT.

Catherine, Paragraph 140, ICT wouldn't be in my top three of priorities in the school. Every class is supposed to do ICT and all the teachers are equally capable of doing it so there isn't a need for me to lay down guidelines as they all know how to use the computers but I do try and encourage the ICT. We are trying to do so much between September and Christmas and get the children up to a reasonable standard.

Deborah, Paragraph 135, It's funny being a principal and teacher at the same time, my role is really a teacher, I suppose if I was an administrative principal I'd be putting a way more emphasis on ICT with the other teachers but because I have responsibility for my own class and I spend so much time thinking about my own class, I probably don't give them enough guidance.

4.3.2 ICT Parents and Community

Parents' interest in ICT ranged from being highly committed to supporting the school in acquiring equipment and arranging parent computer classes to having just a passing interest in technology. Gretty's school is a designated disadvantaged school set in a large town where the parents organised bag packing in shops to get funding for extra resources.

Gretty, Paragraph 156, They were all delighted when we set up the lab and were fully behind it , they got involved in bag packing to raise funds for equipment.

Aoife's school, a large inner city school, provides ICT classes for parents during school hours.

Aoife, Paragraph 20, Here in this school it is the whole thing of the social and school community, where we are all working together, we are all integrating together and we are all helping each other.

Paragraphs 157-159, We have a home school liaison teacher and she runs computer courses for parents in the school computer room and that goes on every Monday morning for an hour, she has hired a teacher to teach the parents.

Parents in Lucy's school were asked to donate directly to the school. Lucy's school is set in a middle class area, and while some parents were willing to donate large sums of money, others were anxious that the technology be used in a productive manner. This attitude put pressure on the school to ensure that ICT was highly visible in all aspects of school life.

Lucy, Paragraph 171, I thought we would get more help from the parents when we were looking for funds to purchase computers. Some parents felt we weren't using the computers we already had and they didn't want to spend money on more computers. We now make sure that all children attend computer classes and they go home telling the parents that they are using computers in school. The children are being bombarded every day with computer work every day and that will filter home. Eventually I think that will have a very positive effect on the school.

Further evidence of this parental pressure in middle class environments is noticeable from discussion with Elayne and Noreen.

Elayne, Paragraphs 147-150, Absolutely, they would have asked at the initial meeting about ICT and they want to know what we are doing at the hour and half lot we have in the room, and the children bring home the work they are doing, at every parent teacher meeting I had, the focused parents will ask about the ICT facilities in the school, the parents are more curious about what we are doing.

Noreen, Paragraph 88, Most of the children are from very wealthy backgrounds, it's really privileged and most of them would have a computer at home. The parents would be concerned if we weren't using the computer room at all with all the money that's gone into it, the parents have never discussed the use of ICT with me but there would be a concern if you were avoiding the computer room.

As a young teacher Brendan was aware of the value of ICT but felt he had to have the support of the parents

Brendan, Paragraph 148, *That's the thing I was conscious of, that includes principal, parents and children of course as regards the ICT I wanted the children to get as much time as I could possibly manage that the parents could see the benefits of ICT and that the Principal could support me and see that [ICT] was making a positive impact.*

Likewise, Noreen was interested in promoting ICT within her school by creating a website but came up against an issue that is causing major concern among parents and teachers alike

Noreen, Paragraph 97, *I had hoped to do a website for the school, we had a parent helping us but he abandoned it after a while as we are not allowed put children's work on the net and we had a fear of parents comparing their child's work with another.*

Further evidence suggests that the some parents have little or no interest in ICT in schools. Catherine, Deborah, Denise and Vivienne agreed that their parents were not putting them under undue pressure to use ICT.

Catherine, Paragraph 192, *Obviously Irish is the main thing in this school and we have to promote the language and all the rest, we are not anti ICT but we are also not very pro ICT. We are really trying to get the children ready for secondary school through the medium of Irish.*

Deborah, Paragraphs 129, *I don't think that ICT is perceived as something important at all in this school from the parents point of view and I think that is a traditional thing, it wasn't important before so why would start being important now.*

Vivienne, Paragraph 152, *I suppose when they come in first they like to see the computers and that the children are going to use them but after that they forget about them.*

Denise, Paragraph 147, *Well the main focus in this school is on oral language, a lot of the children when they come in here they don't come in from a background of being able to count to ten or knowing their abc*

4.3.3 ICT and School Policy

Eleven of the schools have ICT policies. However, only seven of the NQPTs were familiar with and used these policies. Four participants found no value in the document while two young teachers had no access to the school ICT policy. In relation to the usefulness of this document the participants cited the following

- Information on all the computers and facilities within the school;
- Listed the software available for all classes;
- Listed the vocabulary to be taught to the various classes;
- To record all ICT work completed by the children;
- Makes the staff aware of www usage within the school;
- Gave clear directions on the using the school network;
- Provided information for parents on Internet usage;
- Had an acceptable user policy for children and the www.

Aoife, Paragraph 48, Yes, we do. We all [the teachers] have a folder with all the school policy documents including the ICT policy. It helped me in that it gave me information on the use of the computers in the school and how they worked.

Denise, Paragraph 62, Yes, we had. It is really a list of the software we have in the school and gives us an idea of what they [the software] should do. Since then we have introduced an Internet policy. I read the policy and it helped me decide what to use and we shared with other teachers in the school and sometimes we bought our own. It helped me in that I knew what first class was supposed to do.

Elayne, Paragraphs 57-59, Yes, we have, it was already here in the school when I started, all the policies are in folders in each classroom, a very well organized school , the ICT co-ordinator is working on updating the ICT policy.

With their familiarity of ICT a number of the NQPTs were invited to participate in the redrafting of the school's ICT policy their first year in the school.

Aoife, Paragraph 48, We amended our ICT policy last year and I was part of that team that amended the policy, the original policy was very old fashioned so at a staff meeting last year our Principal chose a team and I was included on that team as I was interested in ICT.

Brendan, Paragraph 46, *The school had an ICT policy when I got here but I have been involved in updating it to prepare for the Internet AUP [Acceptable User Policy].*

Linda, Paragraphs 58-60, *Yes, we do. We wrote that about two years ago and we are in the process of updating it this year, we sent out permission slips to the parents about using the www and now we have to update again with the broadband.*

Catherine, Cora and Lucy found no value in the ICT Policy document as they were viewed as just a list of facts. Deborah was too busy trying to sort out other subject policy documents in her role as principal, while Noreen and Gretty were not given access to the document their first year teaching.

Lucy, Paragraph 54, *Yes there was but it wasn't of any real value. There wasn't continuity in it, it was just some facts about the PCs, it could be more specific.*

Catherine, Paragraph 70, *Yes but it was of no use to me.*

Cora, Paragraph 71, *No I don't think there is anything written.*

Deborah, Paragraph 53, *No. I'm trying to get to grips with the rest of the policy documents at the moment.*

Noreen, Paragraphs 56-58, *Yes, there is a big folder in the principal's office which I have not looked at. I wasn't handed the document and told study this. I know we have a policy on the web use, the parents must sign a document and I think we are reviewing the ICT policy soon. I didn't use the school ICT policy when I was planning my ICT work with my class.*

Gretty, Paragraph 49, *There was, but I didn't look for it straight away, neither was it offered to me to read. It wasn't until the end of my first year teaching that I discovered that there was an ICT policy in the school so I didn't use it for planning ICT in my first year teaching.*

4.4 Theme Four: NCTE ICT Co-ordinator and ICT School Co-ordinator.

This theme addresses the role of the local NCTE ICT advisors and the school ICT co-ordinator in relation to the NQPT.

4.4.1 The National Centre for Technology in Education (NCTE)

The NCTE is a Government funded agency, for the purpose of supporting schools and teachers, primary and secondary, integrate ICT into their daily practice. It does this by providing twenty one full-time ICT advisors, based in the Education Centres, spread across the entire country. (See Appendix E for the full list of full-time education centres.) The core work areas of the NCTE are

- *Providing advice and developing policy proposals for the Department of Education and Science (DES) on issues related to the development and use of ICT in the Irish education system*
- *Providing information and advice to other educational agencies on ICT in education*
- *Maintaining a mechanism of funding for schools to develop their technological infrastructure and purchase ICT equipment and software. The funding is provided in most cases by the DES*
- *Designing and implementing a series of in-career ICT training programmes for teachers*
- *Developing and maintaining an educational website portal - ScoilNet*
- *Developing and evaluating educational software*
- *Piloting models of technology integration and support through the Schools Integration Project (SIP)*
- *Providing support in educational ICT to teachers in special needs*
- *Undertaking research on the best uses of ICT in education*
- *Maintaining Irish involvement in current and future EU initiatives*
- *Developing and maintaining an NCTE website.*

(www.ncte.ie 2006)

Local ICT (NCTE) Advisors

At local level, the role of the ICT advisors is defined as follows by the NCTE.

- *They play a key role in supporting the use of ICT in schools. There is a network of 21 regionally based ICT advisors - one located in each of the full-time education centres.*

ICT advisors provide advice on:

- *Technology integration within schools*
- *Suitable ICT professional development for teachers*
- *Innovative uses of ICT in the classroom*
- *Software developments*
- *Internet use, including the ScoilNet portal and safe practice*
- *Support networks*

(www.ncte.ie 2006)

The participants in this study gave the following responses to questions relating to the support they received from their local ICT advisor.

Aoife, Paragraph 53, No. I never had contact with the co-ordinator. I have no idea who it is. I haven't a clue. I couldn't tell you. Are they in the Education Centre?

Brendan, Paragraph 54, No, not with any particular queries, no nothing at all, there were courses on offer, but nothing I was interested in, there was never any contact made with NQPTs in the area, there has been nothing like that.

Catherine, Paragraph 86, I suppose they are leaving it up to the teachers themselves. They do send out regular newsletters regards ICT courses coming up, we get plenty of notification of courses coming up but nothing specific for.

Cora, Paragraph 101, No, never, heard of it and I didn't know either until you asked me earlier. I only found out about the NCTE this year when the broadband came and if we had a problem we had to ring them, they had our number on file and said your broadband is due next week or whatever, other than that I had no contact with them [NCTE]. Until you asked I did not know that these co-ordinators existed.

Deborah, Paragraph 61, No. the only contact was the grant, there was nothing to do with the teaching end of ICT or anything like that.

Denise, Paragraph 67, Yes, the co-ordinator was here last year involved with the senior classes upstairs but I only met her by chance. She did not make any

effort to meet me as a newly qualified teacher. I never had any dealing with her myself.

Elayne, Paragraph 78, *No, I have never met him or her.*

Gretty, Paragraph 55, *Not personally, no. I have never been contacted personally by the local co-ordinator. It would definitely be of use to meet the co-ordinator in your first year out, as soon possible when you begin teaching.*

Linda, Paragraph 71, *No. I never went to the Education Centre, I probably didn't even know about an Education Centre , my first school was a lot bigger and to be fair notices from the Education centre were put up on the notice board in the staff room but as a young teacher you don't think about those things , here anything that comes in is photocopied by the secretary and put on your desk and then other items are notified through a large whiteboard in the staff room telling us to look at the special notice on the staff notice board.*

Lucy, Paragraph 58, *No, that's the girl in the teacher centre, no I have not met her. I have never been invited to meet with the co-ordinator. I have a real issue with that. We had problems with software and she wouldn't come out to the school, you ring her up on the phone and that's it. I don't know the person I don't know anything about her, if she was out here helping us it might be different.*

Mary, Paragraph 141,

INT. *Do you know your local NCTE co-ordinator?*

Mary. *No.*

Noreen, Paragraph 62, *No. I couldn't tell whether it's a he or a she not to mind the name.*

Vivienne, Paragraph 58, *No I haven't. I have had different courses but nothing specifically for NQPTs. We get material from the education centre re. courses but nothing individually from the co-ordinator. A meeting with the ICT co-ordinator would be of use even to make contact with her and make her more open to meetings, I have been ringing her there for the last few weeks about an issue with the school computers and if I had met her on a one to one and spoken to her, it would be more beneficial.*

The data presented above paints a bleak picture of the support these NQPTs received from the national ICT advisory support service during their early years as young teachers. This is a small sample of thirteen NQPTs, however, the sample represents

43% of the ICT advisory support service countrywide. On a positive note, Linda did receive support on moving to a new school during her second year teaching

Linda, Paragraph 81, I made the initial contact, but he knew me, he knows all the staff, he was here in the school about another project and he would phone if there were courses on and see if anybody was interested in doing the course , he is very approachable and will come to check how things are going.

During this study a major initiative was in place to provide broadband service to all schools in Ireland. This work seems to have occupied most of the time of the ICT advisors.

Brendan, Paragraph 50, I met him [ICT Advisor] in relation to a day course that he was giving in relation to installing networks and broadband and principals were asked to attend and my principal asked me to attend on her behalf so I could bring back feedback about it as we are getting in the broadband in the new school.

Catherine, Paragraph 78, Basically it was a group meeting, it wasn't a one-to-one meeting, it was about the broadband for the school. He was our ICT co-ordinator for our area and I met him at that time.

Deborah, Paragraph 61, The networking grant hadn't been applied for but I think the transition between the previous principal and me we missed out on it so he spotted this and he came out to the school and helped me fill in the application form because it was quite complicated to fill in , it needed information on the type of cabling and so on and he talked me through it all.

The three contacts mentioned here were with principals in relation to broadband installation in the school. No reference was made to ICT and its impact on teaching and learning.

4.4.2 School ICT Co-ordinator

Schools with four teachers or more have an option of creating posts of responsibility, on some aspect of school life. Schools choose from a post on library, games, music, health and safety and at times ICT, depending on the interest of the staff and principal in technology. This post, called a B Post, attracts a supplement to a teacher's salary of

€3595 per year. The number of posts available depends on enrolment numbers of the school. Posts are advertised within the school, interviews take place and the post is given to the most suitable candidate. The posts are usually given on a seniority basis but with ICT a junior member of staff may get the post. Within this cohort of NQPTs, six have been given the role of ICT co-ordinator within their schools. Lucy and Cora have paid ICT posts, Deborah and Catherine have the post as part of their principal's duties, while Brendan and Linda have ICT posts without the add-on salary. Aoife, Gretty, Vivienne and Denise were members of the ICT school committee with responsibility for drawing up the school acceptable user policy (AUP) for Internet use.

Aoife, Paragraph 48, We amended our ICT policy last year and I was part of that team that amended the policy, the original policy was very old fashioned so at a staff meeting last year our Principal chose a team and I was included on that team as I was interested in ICT.

The data suggests that the ICT skills and knowledge of these NQPTs were highly valued by their peers and principals in their schools. Elayne, Mary and Noreen are in schools where teachers are already familiar with ICT and have ICT co-ordinators in place.

4.4.3 School ICT co-ordinator and the NQPT

In general, the participants in this study agree that the school ICT co-ordinator provides a useful service for NQPTs in relation to ICT. However Elayne and Noreen did have some minor difficulties.

Elayne, Paragraphs 53-55, She would have been very helpful if I went to her and said I wanted this or that but she is very particular in that she wanted the computer room to be run in her way, she had two sixth class girls turning off the computers every evening and only those two girls can do it and not the teacher. That frustrates me a lot as I have my computer time just before going home time and sometime I wont get around to all the children during the class and I'd like to come back to the room after they are gone home to print out

their work but she won't allow it, little things like that annoy me , and that situation is on going and its school policy but I find her very good if I have a problem with the equipment and she will make a note of it and get it sorted.

Noreen, Paragraph 54, *In this school, to be honest I'm not sure who the co-ordinator is, maybe it is the junior infant teacher because she comes in the morning to make sure the computers are turned on and she makes sure they are turned off as well.*

4.4.4 NQPT as ICT school co-ordinator

As mentioned above, six of the NQPTs are ICT co-ordinators within their schools.

Two are receiving extra payment for this post, two are teaching principals and the remaining two are voluntary co-ordinators. Cora and Lucy, while enjoying the added responsibility, highlight some of the issues surrounding this work. As young teachers Cora and Lucy find it difficult to ensure all teachers are completing their ICT tasks. For the present Cora defers to the principal to undertake this work while Lucy has devised her own solution.

Cora, Paragraph 67, *I have nothing to do with what the teachers do when they go into the lab and I wouldn't dare, I was asked to check out what they were doing and I refused to do it, I wouldn't like if someone came to me and said what was I doing in Maths , have you covered X Y and Z. The Principal meets with the infant teachers quite often to make sure that they are covering the same amount and he will say at all meetings how is your ICT coming on and what are you doing , and he will ask do you need more material and if they do he will ask me to get it.*

Lucy, Paragraph 80, *My problem is that eventually the teachers were meant to come into the room with their own class and take over. They were supposed to learn and get the ICT skills as well as the children. The first week they all came and after that nobody came. So I try and get them back and I actually put them on a computer when they come in and sometimes they stay. As co-ordinator I design the programme for all the classes in the school. As a young teacher this is hard but I work through it.*

Both teaching principals find it difficult to manage ICT and let the staff arrange their own ICT work.

Catherine, Paragraph 66, To be honest, the way it is at the moment, last year we were three young teachers, this year we are still young but I have a retired substitute teacher and the three of us are basically competent in ICT. We all know exactly the same stuff so as regards a co-ordinator, we all agreed that ICT would be done with the children on a weekly basis and the three classes do ICT once a week for about an hour and a half and the same content is covered with all classes and we agreed that as a staff.

Linda and Brendan took on the role of ICT co-ordinator because of their own interest and commitment.

Linda, Paragraph 56, I catalogue all the software if anything is broken the teachers come to me, ink cartridges , all paper work that comes inform the NCTE , I deal with it, and any competitions and so on, they all land on my desk. It was an official post for one year when we had 12 teachers but not anymore. Paragraph 64, I got that job because of my ICT specialization in College, I'd say that during the interview they were looking for someone with ICT, and another friend of mine who did ICT is also looking after all the computers in her school.

4.4.5 Summary

All NQPTs in this study are involved in one way or another with ICT and ICT co-ordination within their own schools. The evidence suggests that having ICT experience at College seems to have been an asset and has helped them in their career.

4.5 Theme Five: NQPTs , ICT and the Inspector

4.5.1 Background

All NQPTs in Ireland must undertake at least one year probation in a primary school before being formally recognised as a fully qualified primary teacher. Part of this probationary period includes at least two visits, one half day and one full day, by a Department of Education and Science Inspector. The final visit is known as the ‘Diploma Day’. During these visits the Inspector observes the NQPT teaching all subjects on the curriculum and reviews all the preparation and planning undertaken by the NQPT. On completion the Inspector issues a report stating ‘satisfactory or not satisfactory’. If the NQPT is given a ‘non satisfactory’ report he/she must repeat the process the following year. NQPTs have five years to complete this probationary period. If they fail this assessment they will not receive official status and will not be employed as a primary teacher. This ‘Diploma Day’ plays a major part in the life of the NQPT during their first year in service and many prepare work to in accordance with the interests of the inspector. During the interviews all participants were asked to comment on the attitude and interest of their inspector on their work on ICT during the diploma day and in particular if the inspector had a positive attitude towards the use of ICT. They also discussed the notion of mandatory use of ICT for NQPTs during their probation period.

4.5.2 Positive comments from the inspectors

Elayne, Paragraph 92, I incorporated ICT into my teaching on that day, she pulled me aside and said that she was so impressed with my use of ICT [PP presentation] and in my Art lesson, she said she had never seen it before, she felt it was fantastic and so different, she had asked to see all the subjects and hadn't mentioned ICT but I wanted to use it [ICT] during the day.

Gretty, Paragraph 108, Yes, I had my notes typed up for my final diploma and the inspector was very impressed which was another booster for me, he was very encouraging.

Linda, Paragraph 101, Last year. I had a lot of games, maths and phonics, taken off the web and had them laminated and she [the inspector] said that was great. In fairness last year our Inspectors were very supportive of ICT and they wanted to see how we were using it.

Brendan, Paragraphs 60-70, On one of the particular days she was here, she was here about four or five times in all, I had two computers in my room, I had a system where children got turns everyday on various software and she asked how often the children used the computer during the week, she claimed herself not to be much of an expert on it so I only highlighted the fact that I used them [the computers] whenever I possibly can and she was happy that they were being integrated.

Deborah, Paragraphs 70-72, [Deborah did her diploma in her first school.] No, I don't think so, I can't remember but it wasn't a big thing. I used the computer but it was never an issue. The cigire [inspector] visited me around four times during my diploma year. He commented on my presentation and said it was excellent and was very impressed with the clarity of it. He was impressed with my own personal use of ICT but was never really concerned as to whether the children were using ICT.

Vivienne, Paragraph 70, I suppose it was really only in my planning that ICT was referred to, it was not mentioned as a teaching tool, the cigire [inspector] was very positive about ICT herself, she had her own laptop and did see the use of it.

4.5.3 No perceived interest in ICT from Inspector

Aoife, Paragraph 119, He gave me a list of subjects that he needed me to note take on and submit notes on and the integration ICT was never mentioned, I remember he specifically mentioned external visits for the visual arts which is a new idea for taking children out on external visits and he never once mentioned the use of the computer, the computer was literally turned off every time he came into the class and he never mentioned it.

Cora, Paragraph 118, For my final visit I was supposed to have an integrated day where you pick one theme and you do everything on that theme so I was given a list of subjects to be covered and ICT was not mentioned, the inspector was not that young so maybe that might account for it. ICT was not mentioned in my final report.

Mary, Paragraph 158, I thought that using the computers was a good idea to show her what I was good at teaching and how these children were getting the best of ICT, the computers were there and it was a shame to have them gathering dust in the corner but she had no interest.

Denise, Paragraph 79, No nothing. You have a computer, you use the computer, yes and that was it. The inspector didn't look for an ICT plan or anything like that.

Lucy, Paragraph 91, it should be brought up, then again he brought up a lot of things but didn't mention ICT.

Noreen, Paragraph 71, No, I can't remember. I don't think so. We had enough issues without discussing ICT.

Catherine, Paragraph 116, It was mentioned with regards to did I use it and I just explained where I did use it and it was left at that.

The comments supplied by the participants suggest that around half of the inspectors were positive towards the use ICT by the NQPTs. However, most of the positive comments refer to the teacher's personal use of ICT for planning and resource production. Only three inspectors discussed ICT in relation to teaching and learning.

4.5.4 NQPT Diploma Report

NQPTs wait eagerly for the arrival of the inspector's report. This is an account of the Inspector's visit and is used by the young teachers as a reference for future employment. Copies of the report are sent to the principal and the chairperson of the board of management of the school. A positive report makes it easier for a teacher to gain employment in another school at a later stage in their career.

Aoife, Paragraph 72, ICT was not mentioned on my final report.

Catherine, Paragraph 116

INT Was ICT mentioned in your final report?

Catherine No.

Cora, Paragraph 118, ICT was not mentioned in my final report.

Deborah, Paragraph 72, My final report had a comment saying my notes were presented very well but nothing specific about ICT, no.

Denise, Paragraph 158,

INT *In your final diploma report was there any mention of ICT?*

Denise *I don't know, I can't remember, I'd have to check it, I don't think so.*

Lucy, Paragraph 202, *No, I'm nearly 100% sure the inspector did not comment on ICT in the final report and yet I remember showing the inspector a book I compiled with publisher and the class during the inspection where I used a digital camera on a story about the school.*

Vivienne, Paragraph 70, *I did use the computers during playtime on my diploma day, there was I think a mention of ICT being used in planning in my final report but nothing major.*

Of the remaining six participants Linda and Noreen are unsure while Elayne, Gretty, Brendan and Mary received the following comments in their final reports. The wording of the reports was supplied by the participants. The reports are written in Irish, what follows is translation of the reports

Elayne: *There was a range of stimuli used in the visual art lesson, the main stimulus being the PowerPoint presentation.*

Gretty: *SESE is taught in a capable manner. Pictures and concrete objects are used effectively with help from the computer to strengthen the lesson and arouse the interest of the children in the material being taught.*

Mary: *She prepares diligently for her classroom work and uses her ICT skills to competently plan her schemes.*

Brendan: *Appropriate use of ICT in maths, particularly with infants in early mathematical activities (classifying, matching, ordering and comparing).*

The evidence gathered during this study suggests that ICT rarely receives a mention in the final diploma report. When ICT is mentioned, it is mostly in reference to planning and preparation. In three reports ICT was linked to classroom practice in the Visual Arts, Maths and the SESE curriculum. These three schools are very ICT active with a high level of interest from the principals, staff and local community. One

school is situated in an upper middle class district while the second site is a designated disadvantaged school and the third is a very small rural school.

4.5.5 NQPTs and mandatory use of ICT

All of the participants in this study are competent and confident users of ICT having had access to laptop computers and the ICT elective module while students in College. The researcher was curious as to their reaction to the notion of mandatory use of ICT during their initial years as teachers and in particular the use of ICT during their diploma. The responses received follow

Aoife, Paragraph 123, Yeah, I'd be fine with that, I'd take issue if they wanted it completely regimented, if there had to be a specific ICT time on the timetable, but I think one of the questions the inspectors, he or she, should have on their list of questions is did the teacher integrate ICT in his / her teaching anywhere during the visit?

Brendan, Paragraphs 157-165, I'd say it would be a given, if the inspector came to me through the door right now and said I'd like to see the ICT policy and see ICT integrated more into the curriculum, you would definitely do it, as a young teacher I would be delighted if the inspector asked to see ICT, it would be something I enjoying doing and of all the things in school this is the thing I like best, you can see the benefits of it and probably the children enjoy it so much makes it that bit more rewarding from my own perspective.

Catherine, Paragraphs 200-202, It depends on the class they have. Definitely there should be some aspect of ICT, they are going to have to integrate it at some level whether they have infants or sixth, it depends on what is in the ICT School Policy document. I wouldn't be fully pro that concept because there are going to be young teachers coming out of college with no ICT experience and would you expect them to do it. If the DES insists on this they will have to give courses and ensure all teachers can use it, you are going to have to teach them how and they need to work out some system to improve facilities.

Cora, Paragraph 240, Yes definitely, and show that you can handle a class in a computer room and with only one computer they should be able to show a definite lesson plan for each exercise the children do.

Deborah, Paragraph 146, Yeah, that would make sense, that's the way it should be in this day and age, we all know how to use it, I don't see any

reason why the Inspectors shouldn't be looking for that , I think it would be better if they looked for it [ICT] you are trying to use all the skills that you have, so if ICT is one of your skills then you should be able to show that , you definitely need a plan and if you don't its not going to work.

Denise, Paragraph 166, *Yes, I think it would make every teacher use ICT, for us the NQPT we should, we are using it anyhow so it wouldn't have made any difference to me, all young teachers should use it, it's the way teaching is going to go.*

Elayne, Paragraph 162, *I wouldn't panic because I do it anyhow, I'm able to do it and I can integrate ICT into my work. I'd probably say that this is another thing to do but I would say that all those leaving College now are well able to use it [ICT] and they wouldn't be daunted by the fact of having to do it , its just that it would be another thing to do , it makes the diploma year busier.*

Gretty, Paragraph 116, *Yes, I think it should, there are teachers see this as the only problem and if they are made do it they might realize that it is not a big a deal as they think it is.*

Linda, Paragraph 183, *I don't know should they demand it now, I mean, there is a curriculum there and that's what we are suppose to do, I think if they are going to demand anything then they must put the resources into it and training. I still don't know about making mandatory because I think a lot of children have computers anyway, a few might slip through the net, but generally children will have computers.*

Lucy, Paragraph 91, *Yeah, brilliant, the fact of having to do would make you use it.*

Mary, Paragraph 252, *I think they should, absolutely. I think for young people, open to new ideas and so on, to go into a class and not make use of computers is ridiculous because there is so much you can do with it [ICT], its not confined to any one subject area.*

Noreen, Paragraph 144, *I think in this day and age people will be more or less expecting ICT but there may be some schools that might not have the facilities so I don't know if you can demand it.*

Vivienne, Paragraph 78, *I wouldn't mind it, especially if your timetabled for ICT and planning for it, you must have some train of thought of what you want to do, I think in general it would be a good thing to have.*

All participants agreed that having ICT mandatory during their initial or diploma year would be positive and help the NQPTs integrate ICT into their teaching. However,

Linda and Catherine suggested that if the DES is going to make ICT mandatory for NQPTs then they will have to ensure all schools have adequate facilities and proper staff training.

The five themes presented in this chapter highlighted some inherent contradictions between the reality of ICT in the classroom and what government policies suggest should be happening.

In theme one the NQPTs discussed the lack of ICT facilities in teaching practice schools, yet reports from the DES show an increase in ICT equipment in all primary schools.

Theme two discussed the participants' thoughts on ICT teaching and learning, their teaching style along with other issues. Contrary to the belief that ICT changes teaching styles the participants suggested that ICT is not having any major effect on their teaching style.

Theme three examined the issue of the ICT school policy. This document is meant to guide the staff in their use of ICT, yet the NQPTs in this study, found it to be of little value in their work.

Theme four explored the role of the national ICT advisory service. The NCTE promote this service specifically to assist the teachers in the classroom, however the NQPTs rarely if ever had contact with this service.

Finally, theme five looked at the role of the inspector and the NQPT. The DES and the NCCA, through its ICT policies promote the use of ICT in the classroom, while the evidence from this study would seem to suggest, that the inspectors have very little or no interest in ICT.

Chapter Four presented that data gathered during this study under the five themes outlined above. Chapter Five will discuss and present the findings of that data.

Chapter Five

5.0 Data Analysis and Initial Findings

Chapter Five discusses and analyses the data of each theme and presents the findings of that analysis.

5.1 Theme One: NQPTs Personal Background.

This theme discussed the NQPTs under the following headings.

- Interest in teaching
- Interest in ICT
- ICT and In-service
- Student Teacher: Laptops and ICT
- Teaching Today

5.1.1 Interest in teaching

All of the participants in this study received at least four hundred and sixty-five (465) points out of a possible six hundred (600) points in their final secondary school examination. A number of the group scored well above the minimum requirements for entry into primary teaching giving them many options at university. So why did they choose primary teaching? All were influenced by parents and teachers they encountered in their time at school, primary and secondary, lifestyle of a teacher, the love of the Irish language and two who felt they could achieve more than teachers they had themselves as pupils in school. Ten of the group revealed that it was teachers they had as children who influenced their choice, while family was the driving force of the remaining three. No one joined the profession for monetary gain. One cited the long holidays as a major attraction as it allowed her time to pursue her travels. Another member gave permanent employment as a reason for taking up the profession. Permanent employment was given by the only male in the group. This member has a very keen interest in the national sport of hurling and permanency gives him the option to play this sport with his local club and use the holidays and short day

to devote to training. Teaching will allow him to pass on the skills of this ancient Irish sport to the next generation. The evidence suggests this group are highly motivated professionals and joined the teaching profession for altruistic reasons plus the added bonus of the long holidays.

5.1.2 Interest in ICT

Three of the participants had no prior experience of using ICT before entering College. Of the remaining ten, home and family were seen as the major driving force in sparking their interest in ICT. All of these students graduated from primary and secondary school ahead of the introduction of the IT2000 Government Policy on ICT in education in 1997. However three participants had been in primary schools where individual teachers had a personal interest in ICT. Four had a similar experience in secondary school where they were involved in the school's yearly magazine. It is worth noting that College has a role to play in promoting ICT as three of this group had no experience of ICT prior to coming to College and subsequently mastered all the skills needed while in College.

5.1.3 ICT and In-service

Seven of the participants have not undertaken any further courses in ICT since graduating from College. The main reason given for this decision is that they had had enough training in ICT while in College and are therefore capable of using it in the classroom. Two have decided to undertake a postgraduate course on ICT leading to an M.Ed., while a further two have completed MA's in Education and History. Five have undertaken ICT programmes based on school administration, networking, ICT and special needs, video production and web design. One of the young principals felt that she had a need to tackle ICT and school administration and another moved into

resource teaching. As ICT co-ordinator, Cora felt the need to undertake training on maintaining networks, while two more undertook courses on web design and video production. Video production was not available in College and this course was necessary as Noreen was undertaking video work with her own class. Web design was delivered in College but Brendan felt the need to up-skill to more modern software to complement his role as ICT school co-ordinator. The data suggests that the ICT elective course in College is preparing students for ICT usage in the classroom and that further in-service is needed only for specialist areas. However, all participants suggested that in-service on ICT and classroom management would be very beneficial to the NQPTs.

5.1.4 Student teachers: Laptops and ICT

All of the participants in this study had access to personal laptops and completed the ICT elective while in College. All agreed that the laptop scheme provided them with personal access to ICT and made life in College easier regarding assignment deadlines. However, the data suggests that there needs to be greater consistency in relation to ICT and Teaching Practice. All of the participants used their laptops for lesson note and resource preparation but very few had positive comments to make on their supervisor's attitude towards the use of ICT. In fact a number of the participants were afraid of being accused of cutting, copying and pasting lesson notes. Where they did have access to computers during the practice and used them, they received very little encouragement from the schools or the supervisors. The ICT elective was seen as helpful in preparing them for skills but lacked real life situations. The participants recommended that more time be spent on integrating the skill they acquired with lesson plan preparation. There were also some recommendations on devoting some

time to basic troubleshooting and some discussion on networking. Overall, there was agreement that the ICT elective and access to laptops as undergraduates did prepare them for using ICT in their first year of teaching.

*Document 'Transcript of Interview with Mary', Paragraph 257,
My life would be over without my laptop*

5.1.5 Teaching Today

All of the participants expressed agreement that they are happy and contented in their chosen profession. A number of themes emerged from their discussions. Paperwork and accountability were high on the list of worries. As young teachers they were not prepared for this work. Parental involvement was seen as an added pressure. Both young principals felt that trying to teach and deal with parental concerns meant long hours after school completing paper work. Catherine felt that the parents she dealt with had no respect for teachers and that this had an effect on the behaviour of the children. Children's reported short attention span and lack of concentration was another issue causing concern. Teaching in a multicultural classroom, a new phenomenon in Irish schools, is causing concern. Difficulties were raised as to their preparation for dealing with this issue along with teaching in a multi-class setting in small rural schools. Finally, the issue of loneliness for the NQPT was highlighted, particularly in small schools. A major concern of all NQPTs is the dreaded Diploma Day. This issue will be discussed in detail in Theme Five.

5.2 Theme Two: NQPTs Teaching with ICT

This theme considered the following

- ICT Teaching and Learning
- Teaching Style of the NQPTs with ICT
- The importance of ICT in primary education
- The future of ICT

5.2.1 ICT Teaching and Learning

One participant focused on the lack of computer facilities, however, that particular setting was getting a new school and acquiring new ICT equipment. This seems to show that the Department of Education's allocation of funding for equipment is successful in these schools. ICT skills were not an issue as all felt they had sufficient knowledge to tackle most difficulties. This is also made clear by their lack of interest in taking ICT in-service courses. The one concern to dominate the discussion on barriers to successful use of ICT was classroom management. The NQPTs felt that they had not gained sufficient experience in College during Teaching Practice to fully integrate ICT into their teaching. Large classes and lack of space in smaller schools to use the equipment were also cited as major obstacles. Aoife discussed a problem in her site, in that as a NQPT she was given outdated equipment in her classroom but did have access to a fully equipped computer room on a weekly basis. Both young principals agreed that the responsibility of teaching and headship did not leave much time for integrating ICT.

The majority of the participants favoured the computer room when working with ICT. The evidence suggests that they feel more in control with all the children together in one room. This relates back to their lack of classroom management skills in dealing with the one-computer room. However when asked their preference the majority agreed that having access to both a computer in the classroom and a computer room with broadband access and an LCD projector was the ideal situation.

5.2.2 Teaching Style of the NQPTs with ICT

Six computer room lessons and one classroom lesson were observed during this study. (The remaining six NQPTs were unable to provide a time slot for a full classroom observation but discussed their use of ICT during interview, *see 4.2.5 above*.) Each session lasted forty minutes and a FIAC (Flanders Interactive Analysis Category) instrument was used to record the observations (Appendix F). Of the six computer room sessions, five were taken by the NQPT while the sixth was taken by the fulltime school ICT co-ordinator accompanied by the NQPT and a classroom assistant. This site was a designated disadvantaged school and had the funding to employ a full-time ICT co-ordinator. All lessons observed were active, child centred, employed group work and peer tutoring, all were integrated with other subjects i.e. Maths, Music, Language both English and Irish and SESE (Social Environmental and Scientific Education). All these NQPTs utilised LCD projectors and the Internet during their lessons. All agreed that the LCD projectors made using ICT a lot more interesting for the children and themselves. Eleven of the participants used LCD projectors on a regular basis. Content free and content rich software was used by all participants. At times the lessons had a limited amount of teacher input, but in most of the lessons the children were given freedom to collaborate with their classmates. The remaining two lessons observed were limited in that one was with a teaching principal and the other was in a classroom with a high level of misbehaviour. The young principal was unable to stay in the computer room as she was constantly interrupted by requests from parents and children from other classrooms. The final observation was in a classroom in a designated disadvantaged site where the NQPT was trying to integrate ICT into a language lesson for a group of immigrant children. She had limited support and felt that she was not utilising ICT fully in her work.

Of the remaining participants, Aoife, Mary and Vivienne taught basic skills to their infant classes using appropriate software but pointed out that it takes a long time to organise infants in a computer room. Elayne and Linda are constant users of ICT and Deborah, one of the two young principals, has the same difficulties as Catherine in that as principal she finds it difficult to find time and space to properly integrate ICT. On discussing teaching style and ICT, these NQPTs felt that ICT is not changing their teaching style as they began their career with ICT in place and have no experience of teaching in a school without ICT. Linda stated that

‘No, not really, you see I didn’t have another teaching style, when we come out we are just used to computers, its not like approaching someone who has been teaching for ten years and then they started this, then their teaching style might change but that is our style.

However, a number of the participants suggested that their style of teaching is influenced by the way they were taught themselves in primary school. College experience did not seem to influence their teaching style.

5.2.3 The Importance of ICT in primary education

As expected, all but one of the NQPTs believed ICT plays an important role in education. However, Cora, one of the ICT co-ordinators in this study, proposed the notion that parents should play a more pivotal role in ensuring their children have access to ICT. She tries to integrate homework and ICT.

5.2.4 The future and ICT

ICT is not a discrete subject in Irish primary schools but rather is viewed as a tool to enhance all areas of the curriculum. Suggestions on preparing a definite curriculum for ICT were put forward by a number of participants as a way of ensuring ICT use.

This they felt would give direction and clarity to all teachers. Vivienne was a little pessimistic in that she felt the DES would not continue to fund ICT in schools in the years ahead.

5.2.5 Discussion

The data suggests that the majority of these NQPTs are integrating and infusing ICT into their teaching. Their style of teaching is child centred and active. Where issues do arise, it is not lack of equipment or knowledge but a lack of time owing to other concerns, particularly the teaching principal. They are incorporating all the elements of ICT technology including the Internet and LCD projectors where and when available. They have utilised their SNA's (Special Needs Assistants) in the computer rooms and in the classrooms to assist with ICT. Technology is not radically changing their teaching style, as they have no experience of teaching without ICT. All are in agreement that ICT has a major role to play in education and that while integration is important the need for some form of a definite ICT curriculum might help the process.

5.3 Theme Three NQPTs ICT School and Community

This theme examined ICT and NQPTs under the following topics

- ICT and the Principal;
- ICT, Parents and Community;
- The School ICT Policy.

5.3.1 ICT and the Principal

Unrecorded conversations with the principal teachers in the participants' schools show a high level of satisfaction with the NQPTs skills and knowledge of ICT. The evidence for this comes from the fact that to date four of the group are already official ICT co-ordinators of their own schools, including the two young principals. Two are unofficial ICT co-ordinators, which means they have the responsibility without the extra payment. Gretty's work on ICT in her own classroom influenced school policy in that the principal used extra funding to employ a full-time ICT co-ordinator and raised funding from the community to install a modern computer room in the school. Likewise, in Elayne's school, the principal was so impressed with her ICT work that she organised laptops for all the staff and since then has provided all classrooms with LCD projectors. Aoife and Mary participated in a mentoring programme organised through the school and local education centre. The positive attributes described by the NQPTs in relation to their school principals' were as follows

- Computer literate;
- Have respect for ICT;
- A hands on approach;
- Openness to change ;
- Giving young teachers freedom to experiment;
- Creating a space and time for discussion with colleagues;
- Allowing the school facilities to be used for ICT in-service;
- Providing a mentor in the first year;
- Giving the NQPT responsibility for ordering appropriate software;
- Providing the latest resources;
- Willingness to delegate if not ICT expert;
- Be available to support with technical difficulties

The data suggests that principal teachers do support NQPTs in integrating technology in their classrooms but teaching principals have a major difficulty in promoting ICT in their schools as they are constantly under pressure from administrative and teaching duties.

5.3.2 ICT Parents and Community

In general, the NQPTs agreed that parents have a positive attitude towards the use of ICT in schools. The teachers in the middle and upper class schools felt under an obligation to use ICT as the parents had provided direct funding to equip the school. Lucy had some difficulty in raising funds as the parents questioned the use of previous funds towards ICT. As a result the school implemented a full ICT programme for all classes and kept the parents informed through regular newsletters. Elayne, Vivienne and Noreen suggested that parents will question the use of ICT during enrolling day at the school and will ask to see the ICT facilities. Cora published a school brochure and included the ICT facilities as a school resource and so parents expect ICT to be used. The schools in the designated disadvantaged districts had access to high quality ICT facilities and had the full backing of parents during fund raising activities. The parents became involved in ICT classes in the school but did not put the teachers under pressure to show results. In the three rural schools the parents were extremely helpful and at times were sympathetic towards the teachers as they understood the issue of lack of space to house the technology.

5.3.3 The School ICT Policy

How did the School ICT Policy support the NQPTs? The data suggests that the NQPTs got very little from this document. Eleven of the schools had policies but only

seven of the participants had referred to the document. Four found no value in the document and two never saw it. Aoife, Lucy, Brendan and Linda were involved in redrafting the policy in light of the new regulations surrounding the use of the Internet in schools. Catherine and Deborah were too busy with their duties as principals. The group agreed that an up to date ICT policy would be useful to NQPTs but should be more than just a list of the software and equipment in the school. They suggested that an ICT Policy should have the following

- Information on all the computers and facilities within the school;
- List of software available for all classes;
- List of vocabulary to be taught to the various classes;
- Record of all ICT work completed by the children;
- Clear directions on using the school network;
- Information for parents on internet usage;
- An acceptable user policy for children and the www.

These findings send a clear message to all Principals and ICT Co-ordinators, in order to ensure ICT activity from NQPTs it is essential to provide an up to date ICT Policy document to all on arrival in the school. The data suggests that NQPTs should have an input into ongoing formulation of this document in order to promote ownership of the work.

5.4 Theme Four: Local and National ICT Co-ordination

This section reviews the data on the Local NCTE ICT Advisory Service, the school ICT co-ordinator and the NQPT as School ICT Co-ordinator

5.4.1 National Advisory ICT Service and NQPTs

The role of the NCTE (National Centre for Technology in Education) ICT advisory service is discussed in detail at 4.7.1 above. Suffice to say the evidence from this study illuminates the fact that the service is not supporting NQPTs in relation to ICT classroom integration. The data shows that only four of the participants had direct contact with the advisor. In three of those cases the contact was in relation to broadband issues within the school and the NQPTs were representing the Principal at the meetings. Two of these NQPTs were in fact the principals. Only one NQPT met with the ICT Co-ordinator in relation to teaching and learning and that occurred in her second year of teaching and only happened as the co-ordinator was personally known to the NQPT and the school was active in an ICT maths programme. Even though this study has only thirteen participants, they are teaching throughout the country and represent forty three percent (43%) of the total ICT Advisory Service catchment area. (See appendix E) A number of participants did acknowledge that the school did receive information in relation to local ICT courses but nothing specifically in relation to NQPTs. The group felt that a specific session on ICT and NQPTs would be beneficial as they would have an opportunity to discuss their situations with fellow NQPTs.

5.4.2 School ICT Co-ordinator and NQPT as ICT Co-ordinator

The role of the school co-ordinator is normally agreed between the principal and staff. The role usually takes the form of managing the ICT facilities within the school, including software and hardware, some maintenance, along with liaising with the staff on timetabling the computer room if one is available. There was general agreement that all ICT co-ordinators within this study were active in promoting ICT within their schools and assisted the NQPTs with any minor issues regarding software and hardware. There were only two dissenting voices within the group and these referred to the ICT co-ordinators being a little over possessive of their role. It is interesting to note that six of the NQPTs in this study are already their schools' ICT co-ordinators; two in their role as principals in small schools, two permanent ICT co-ordinators with the add-on salary and two unofficial co-ordinators. All are actively involved in ICT planning within their schools, in particular, Aoife, Gretty, Deborah, Cora, Catherine, Brendan, Elayne, Mary, Linda, Lucy and Vivienne. While Noreen is very active with ICT within her classroom, her ICT co-ordinator is not and just turns the computers on and off at specified times. Denise has many other issues in her classroom and leaves the ICT co-ordination to her principal.

How does a NQPT take on this responsibility and how does he she work with experienced teachers? Cora and Lucy admit to having some difficulty with ensuring the teachers are completing the agreed programme. Cora refused to check up on teachers work in the computer room. She will arrange software, maintenance and timetabling but has deferred to the principal in relation to work completed. Lucy's classroom is the computer room. Her infant classes finish an hour earlier than the remainder of the school so she takes computer sessions for the remainder of the

school from two to three p.m. The initial plan envisaged the class teachers participating in the lesson and would after time take the class themselves. However, at times Lucy finds herself alone in the room as the teachers use this time for preparation and marking. Even though she feels under pressure she is unwilling to talk to the principal regarding this issue. She has instead devised her own solution. She has placed spare computers in the classrooms and gets the children to continue working in groups when they return to the classroom. In this way she hopes the teachers will become involved and participate fully. Brendan and Linda took on the role of unofficial ICT co-ordinator purely out of an interest in the technology. Both are enjoying the post but do not have the responsibility of ensuring all teachers are actively using ICT.

The evidence suggests that the school ICT co-ordinator's role is vital to the continued success of ICT in education. It also suggests that principal teachers are satisfied with the quality of the NQPTs ICT knowledge and skills and utilise their commitment fully. However the principal needs to support the work of the ICT co-ordinator, particularly if the co-ordinator is a NQPT.

5.5 Theme Five: NQPTs, ICT and the Inspector

Finally, this section reviews that data on the schools' inspector in relation to ICT and the NQPTs, the Diploma Day and the mandatory use of ICT for NQPTs.

5.5.1 The Inspector and ICT

It is abundantly clear from the data that all participants are highly competent in the basic skills of ICT. All have used technology at some stage in their teaching to date, whether it is the one computer in the classroom or in a computer room. Lessons have been observed in all classes from junior infants through to sixth class. Various software packages have been utilised, content free and content rich, peripheral technology including digital cameras, scanners, printers and LCD projectors have also been employed with much success. This would lead one to believe that the school inspectors working with these NQPTs during their probationary year would encourage and support these teachers in the use of ICT. However, the evidence gathered would indicate a different story. Of the thirteen participants, only three received comment on their use of ICT in relation to teaching and learning. Along with those three, four received comments on their personal use of ICT for administration work. The remainder received no comment on ICT and in one particular setting the inspector was annoyed when the lesson notes were not printed out even though the NQPT had all the necessary paperwork completed on her laptop. The young teacher was at fault in not having the documents printed out but was willing and able to print them out in a matter of minutes. This negative encounter with authority left the NQPT in a distressed state for the remainder of her Diploma observations.

5.5.2 Diploma Day

The Diploma Day is the high point in the first year of the NQPT. Days and hours of preparation go into this one day. A satisfactory performance results in the NQPT becoming a fully recognised primary teacher. A positive report gives the NQPT a reference for future employment. The specific interests of the inspector are well known by the NQPT and he/she will build their teaching day around those interests in order to get a favourable report. On occasions an inspector will give the NQPT a list of topics they want taught on that day. The data suggests that ICT is not a high priority area with the inspectors. While acknowledging the sample of thirteen is small in relation to the overall numbers of NQPTs taking their diploma in any given year, the thirteen inspectors involved in this study make up nineteen percent (19%) of the total inspectorate taking NQPTs diplomas.

5.5.3 Mandatory use of ICT for NQPTs

All primary teachers in Ireland follow a curriculum laid down by the NCCA (National Council for Curriculum and Assessment). The curriculum is made up of language, both Irish and English, Maths, Visual Arts, Drama, Physical Education, Social Personal and Health Education (SPHE), Science, History, Geography (SESE) and Music. All schools have Religious Instruction but this is not monitored by the Inspectorate. ICT/technology is not regarded as a subject to be taught but the NCCA Curriculum recommends that ICT should be used to enhance all aspects of the curriculum. Therefore, officially, NQPTs are not obliged to use ICT in their teaching. All B.Ed students, while in College, receive a basic module on the use of ICT and are encouraged by ICT staff to integrate ICT into their teaching. This researcher was interested in how these NQPTs would react to the notion of mandatory use of ICT for

their Diploma Day. Not surprisingly all participants agreed that they would have no objection to ICT use, as long as the school or classroom had adequate ICT facilities. In fact, the majority of NQPTs in this study would welcome the opportunity to show their competence in ICT use during the Diploma day.

5.5.4 General summary of findings from the five themes

Theme One: These NQPTs were influenced by previous teachers and family members to join the teaching profession. The lifestyle offered by teaching allowed them to develop their personal interests in sport, music, drama, language and travel. They all had teaching as number one on their CAO application forms and were recognised in their secondary schools as high achievers. Monetary gain was not a priority. For some, their interest in ICT began at home, school and for others in College. While they all are contented in their chosen profession they expressed concerns regarding the amount of paperwork involved in their daily schedule, accountability and the demands on children in their care. They agreed that the ICT elective and laptop scheme prepared them adequately for integrating ICT but suggested that more need to be done in the areas of classroom management and teaching practice. They needed more classroom experience of ICT while in College and supportive supervisors during teaching practice.

Theme Two. The NQPTs were more comfortable in taking a class in a computer room rather than in the one computer classroom. All subject areas were integrated using ICT and their teaching style was active and child centred. They utilised group work, collaborative project work and role play along with traditional instructive methods of teaching. ICT did not radically change their teaching style as they all

agreed they did not have experience of teaching without technology. They all confirmed that ICT has an important role in education and look forward to continuing using it in the future

Theme Three. The principal was found to be a vital cog in the implementation of an ICT programme. The NQPT depends on a strong principal with vision and a willingness to give an opportunity to experiment with technology. Parental support for ICT was active in all schools and the school ICT policy documents were of little benefit to the NQPTs.

Theme Four. The NCTE (National Centre for Technology in Education) advisory ICT service was found to be lacking in support for NQPTs. In general, the school ICT co-ordinators were found to be helpful and encouraging. When the NQPT became the ICT co-ordinator, he/she had the support of the principal.

Theme Five. The inspectorate did not always support the NQPTs in relation to the use of ICT during their probationary year and specifically during the diploma visits.

Chapter Six will discuss these findings in relation to the literature review presented in Chapter Two.

Chapter Six

6.0 Findings from the study related to the literature

6.1 Introduction

Many of the findings of this study concur with those of the literature. This chapter discusses the following topics:

- Teaching Today for NQPTs;
- ICT Pre-service;
- ICT Access during pre-service;
- Teaching Practice and ICT ;
- Barriers to ICT use for NQPTs;
- Teaching and Learning with ICT;
- Role of the Principal Teacher, ICT and the NQPT;
- ICT Policy and NQPTs;
- ICT Co-ordinators and NQPTs;
- Professional Development;
- Local ICT Advisor and the NQPT;
- The Inspector and Diploma Day for NQPTs.

6.2 Teaching Today

As discussed by Cattani (2002), the NQPTs in this study provided evidence of parental involvement in their first years of teaching. Parents in the upper to middle class schools were seen as demanding and at times lacking in respect for the teachers. Consequently, this attitude had a negative effect on the behaviour of some of the children in the class. Parents from designated disadvantaged schools and rural schools were perceived as supportive in that they volunteered to raise funds for ICT facilities and participated in ICT classes in the school. Contrary to the findings of Hammond and Mumtaz where young trainee teachers *did not view their past experience of school as particularly important to their teaching* (Hammond & Mumtaz 2001, p. 173), ten of the participants in this study agreed that their choice of career and style of teaching were influenced by teachers they had in their own

schools along with family encouragement. Issues of multi-class settings and multi-cultural classes as described by Shilea (2002) were also discussed along with the pressure of paperwork and accountability as described by Moyles and Robinson (2002). The literature and data gathered from the participants are in agreement and it would seem that all NQPTs face similar challenges during their early years in the classroom.

6.3 ICT Pre-service

The participants in this study agreed that their ICT experience at College was positive. It gave them confidence to use ICT for personal use in preparing lesson notes, schemes, resource preparation and research. However it did not prepare them to integrate and infuse ICT into their daily teaching. The NQPTs felt they needed more time on ICT and classroom management and modelling by all education faculties on the use of ICT in subject specific teaching. Evidence from the literature suggests that this is an issue in colleges worldwide. Kay & Knaack (2005) suggest that pre-service teachers are unprepared and provide ten strategies for successful integration. Angeli and Valanides (2005) recommend the use of Pedagogical Content Knowledge, while Friedman & Kajder (2006) promote the notion of multiple opportunities for ICT use by student teachers. Luukkainen (2000) advises the use of ICT for networking among trainees. One participant, Mary, was involved in a mentoring network through her local education centre. Technical problems with networks meant the initiative failed. She enjoyed the programme but was disappointed the network failed and did not allow her to have direct contact with other NQPTs on the programme. The data and literature concur that colleges of education, while offering ICT modules, are

seemingly not succeeding in preparing students to integrate ICT fully into their teaching.

6.4 ICT Access during pre-service

Brown (2002) lists one hundred and forty education colleges with laptop programmes. The vast majority of the literature is in agreement that having personal access to technology is positive and promotes the use of ICT in teaching. Vail *et al.* (2004) agree but warn that NQPTs with laptop experience have difficulty in schools that lack proper equipment. McVay *et al.* (2005), Angeli and Valanides (2005) and Kay and Knaack (2005) warn of laptop programmes having little effect unless there is a fundamental shift in ICT modules within the colleges. In line with the findings of Philips *et al.* (1999) the NQPTs in this study agreed that having a laptop gave them confidence in the basic skills, but failed in preparing them for integration in the classroom.

6.5 Teaching Practice and ICT

All NQPTs in this study achieved an honours grade in their final teaching practice in College. However, ICT did not play a major role during their practice. They did use their laptops for lesson and scheme preparation but only one participant managed to integrate ICT in her teaching. A significant barrier to their use of ICT was their supervisor. The supervisors did not encourage or look for ICT use during their observation visits. At times the students were accused of copying and pasting notes or getting material from the Internet. Many participating teachers did not promote or encourage ICT use during the practice. Participants also highlighted time as a major barrier to ICT integration during teaching practice. The literature promotes

collaboration, field base experience and mentor teachers as strategies to support students to integrate ICT into their practice and echoes the difficulties mentioned by the participants in this study. Carroll *et al.* (2003) discuss lack of commitment in a supporting school while Barton and Haydn (2006) argue that it is difficult to find appropriate mentors to work with the students. Mullen (2001) suggests that lack of supportive teaching practice supervisors militates against the use of ICT. The issues surrounding ICT and teaching practice seem to be similar nationally and internationally.

6.6 Barriers to ICT use for NQPTs

All participants in this study are ICT competent in that they had access to laptop computers and completed the ICT elective in college. The assumption is that this barrier, lack of ICT skills, often cited in the literature (Pelgrum 2001; Rosen & Weil 1995; Wooley 1998; Sandholtz *et al.* 1997; Williams *et al.* 2000; OECD 2003) is not an issue for this group. Access to hardware and software was not an issue as all schools in the study had adequate ICT facilities including broadband for Internet use and LCD projectors for computer room or classroom work plus the usual peripherals of printers, digital cameras and scanners. The one major obstacle mentioned by all participants was their classroom management skills. This finding concurs with the issue of ICT at pre-service discussed above. Lack of experience during teaching practice and lack of suitable role models were cited as major barriers to successful integration. Other issues highlighted were lack of space in small classrooms and time, as discussed by Wood *et al.* (2005), specifically during their probationary year. A further local issue, not found in the literature, concerns the role of the inspector, NQPTs and the Diploma Day. These young teachers were trying to conform to the

wishes of the inspector. If ICT was not on the list of priorities of the inspector the NQPT did not devote time to ICT. The DES (2005) report *Beginning To Teach* highlights the lack of interest shown by the inspectorate in ICT. The two young principals were under severe pressure and found it very difficult to promote or integrate ICT into their work.

6.7 Teaching and Learning with ICT.

Observations of and discussions with the participants suggest the majority are adopting a child centred approach with ICT in line with the findings of Jonassen *et al.* (1999), McFarlane (1997), Dennersten (1999) and Pelgrum and Anderson (1999). Lessons were active, involved group work and had a clear focus. There was ample evidence of integration in all areas of the curriculum. Examples included:

- Problem Based Learning (PBL) sessions, designing an Irish language web site;
- Sessions involving coaching and collaboration, designing a class newspaper;
- Sessions using ICT to support language acquisition in a multicultural class.

One particular participant had designed her own resource to support teaching Irish grammar. This is a very difficult process but the children, normally turned off by this topic, were eager and willing to participate during the lesson. (A full description of lessons observed was presented in Chapter Four.) The majority of the participants preferred the computer room when using ICT. However according to Mulkeen (2004) over 50% of computers in Irish primary schools are in the classroom. This fact necessitates that pre-service and in-service ICT programmes must devote more time to classroom management issues. The NQPTs felt they had more control in this setting thus avoiding management issues with the one computer classroom. Eleven members used the LCD projector in class and utilised a variety of both content free

and content rich software. At times there was evidence of what John and Sutherland (2004) call '*chaotic and messy*' environments. Both young principals agreed that they were not integrating ICT successfully owing to lack of time and the added pressure of being principal.

6.8 Role of the Principal Teacher and ICT

All participants agreed that their head teachers were supportive in relation to ICT. The two young principals, while acknowledging that they themselves had difficulty in integrating ICT into their own teaching, did support their staff by providing appropriate ICT facilities within their schools. The evidence suggests that the principal teachers displayed the leadership attributes discussed by (Gardner 1990; Cheng 2002; Fullan 2001; Kennewell *et al.* 2000 and the OECD 2001). The NQPTs were given freedom to purchase software, three participants were active in devising the school's Acceptable User Policy for Internet use and two represented the principal at various ICT meetings regarding broadband installation. Two participants were given full responsibility as ICT co-ordinators while a further four had the post without the add-on salary. Support was available with technical difficulties but one participant had an issue regarding support in encouraging staff to participate in ICT classes and another in ensuring that ICT work was completed. These concerns will be discussed later.

6.9 ICT Policy and NQPTs

Evidence from NCTE (2002), Harris (1994), Kennewell *et al.* (2000) and BECTA (1998) all support and recommend the publication of an ICT School Policy. They further recommend that the policy should be constantly updated and should be a

collaborative project involving all teachers in the school. The findings of this study highlight that NQPTs did not have access to the policy on arrival in the school. Eleven of the schools had ICT policies but only seven participants referred to the document and four of that group found it of little value. Both young principals did not update the original school policy. The evidence illustrates the need for schools to publish an appropriate and up to date ICT policy for the school and specifically for NQPTs joining the staff. Evidence from the most recent report on *ICT Infrastructure in School in Ireland, 2005*, shows that while 80% of primary schools had ICT Policies only 49% of the schools updated the policies at least annually (Shiel & Flaherty 2006).

6.10 ICT Co-ordinators and NQPTs

The findings of this study concur with those of Kennewell *et al.* (2000) in that six of the NQPTs in this study are ICT co-ordinators within their own schools. They include the two young principals, the two official co-ordinators and the two unofficial co-ordinators. All co-ordinators are working classroom teachers as suggested by Reilly (1999) and Lucock and Underwood (2001). Their work includes managing the computer systems within the school along with purchasing relevant software, timetabling and assisting other members of staff with day to day issues as they arise, as discussed by Fox (2003). Problems occur for NQPTs as ICT co-ordinators when they have to try and encourage reluctant colleagues to use ICT. The two full-time co-ordinators devise and prepare a programme of work for the entire school. However, they have difficulty enforcing the programme as some members of staff opt out and expect the co-ordinator to teach the children in their own time. One NQPT co-ordinator, an infant class teacher, takes classes in the school computer room after her

infant class has gone home. (Infant classes in Ireland finish one hour before the rest of the school.) Another NQPT co-ordinator provides ICT classes after school hours. The co-ordinators are unsure about how to deal with senior colleagues and felt they needed the support of the principal. They have refused to check up on teachers' classroom work. Similar findings are reported in Lai and Pratt (2004). Unofficial co-ordinators did not have this problem as their work was viewed as voluntary and did not have official backing. The remaining NQPTs in this study were satisfied with their school's ICT co-ordinators in that they gave them all the support needed when requested with two making the comment that the co-ordinators were a little possessive of their role, i.e. the co-ordinators has access to the key and wanted to control the use of the computer room.

6.11 Professional Development

Mulkeen (2004), Galanouli *et al.* (2004) and McCormick & Scrimshaw (2001) provide evidence of dissatisfaction among teachers regarding the quality of ICT professional development being delivered. The NQPTs in this study agreed they had the basic skills but in line with the findings from the literature, needed in-service work on ICT and classroom management and subject specific curriculum work. Five participants undertook further ICT courses on video production and networking to assist them in their role as ICT co-ordinators, ICT and special needs and one principal took ICT and administration. Overall the NQPTs found the ICT in-service courses on offer to be too skills-based and lacking in relevance and content.

6.12 Local ICT Advisor

One of the main functions of the local ICT advisor in Ireland, according to the NCTE is *visiting schools and advising teachers on the integration of ICT in their teaching*

and in pupil learning (NCTE 2004, p. 38). A detailed description of the work of the advisory service was presented earlier. The findings of this study clearly suggest that NQPTs are unaware of the service and are not considered to be a high priority by the NCTE. Similar concerns of lack of awareness and support were raised in a study completed by Wright and Wilson (2005) on first year in-service teachers in Alabama, USA.

6.13 The Inspector and Diploma Day for NQPTs

The data from this study illuminates the fact that while some reference was made by the Inspectors to the use of ICT by the NQPT in lesson note and scheme preparation very little comment was given on the use of ICT in teaching and learning. NQPTs are at times confused by this reaction from the Inspectors. The NCCA (1999) recommends the use of ICT in learning and teaching and yet the inspectors while probating the NQPTs in this study were not unduly concerned about whether or not ICT was used.

6.14 Summary

The findings of this study and the literature seem to suggest that the problems encountered by the NQPTs regarding ICT use in Ireland are very similar to those worldwide. Issues such as pre-service, access to ICT, teaching practice, barriers to ICT use, teaching and learning, role of the principal teacher, ICT school policy, ICT co-ordinators, professional development and induction are common to all.

Chapter Seven

7.0 Discussion and Recommendations

7.1 Discussion

The principal aim of this research was to explore;

- How newly qualified primary teachers (NQPT), competent and confident users of technology, integrate ICT into their teaching during their initial teaching career?

The study also aimed to further explore the following sub themes:

- How did the ethos of the school impact on newly qualified primary teachers, competent and confident users of technology, use of ICT in their classrooms during the early years of their teaching career?
- How the laptop programme and pre-service ICT training at Mary Immaculate College, equipped the NQPTs to integrate and infuse ICT into their teaching?
- How the use of technology, while at Mary Immaculate College contributed to the integration or lack of integration of ICT during their initial career?
- What are the perceived barriers to ICT use in their schools?

The data gathered during the study indicated that ten of the thirteen used ICT on a regular basis within their classrooms. The three remaining participants had unusual circumstances that militated against using ICT, two were teaching principals and the third was in a unique multicultural setting requiring much classroom support. The issue of the teaching principal and ICT use was highlighted by Shiel and Flaherty in a

report on ICT in Ireland. The report stated that *many questionnaire respondents were principal teachers, who did not have sufficient time to work with computers because of other teaching and non-teaching obligations* (Shiel & Flaherty 2006 p.55).

Examples of ICT integration were observed in all areas of the curriculum. (Full details of the material taught during the observations and discussed with NQPTs during the interviews were presented in Chapter Four.) Work observed included:

- ICT and Mathematics (junior and senior classes);
- ICT and Language (Both English and Irish);
- ICT to teach basic Irish grammar (senior classes);
- ICT and History;
- ICT and Geography;
- ICT and Music;
- Using ICT to support second language acquisition with foreign nationals;
- ICT and learning support;
- ICT basic skills (junior classes);
- ICT and web design to promote creative Irish writing (senior classes);
- ICT and publishing a class newspaper (senior classes);
- ICT and writing using both word processing and presentation software;
- ICT and personal research using the www;
- ICT for schemes, monthly reports and personal general administrative duties.

The NQPTs' teaching style was active and child centred, allowing children to collaborate in groups and discover for themselves the answers to various problems. LCD projectors were used by eleven of the NQPTs during classroom work. They felt that ICT was not changing their teaching style as they grew up with technology and didn't know any other teaching method. The Internet was used extensively by all in personal research, for day-to-day administration and by the majority of participants in the classroom as a teaching and learning tool as discussed in Chapter Four.

7.1.1 School Ethos

All participants agreed that the principal teachers in their schools were supportive and were willing to allow the NQPTs freedom in relation to ICT use. As discussed earlier,

six of the participants were ICT co-ordinators. The NQPTs felt that most ICT policy documents were of little help and needed regular updating, (see 6.9 above). This concurs with the findings of a recent 2005 census on ICT Infrastructure in schools that highlighted that only 49% of Irish primary schools update their ICT policy on a yearly basis. Parents and the local community were supportive but it was noted that parents from schools in middle class areas were more demanding and wanted to see value for money in relation to fund raising for ICT equipment (see 5.3.2).

7.1.2 Experience at pre-service and laptop programme

Their experience of ICT at pre-service was positive in relation to skills acquisition but lacked practical experience in the classroom. The NQPTS suggested that the attitude of teaching practice supervisors needs to be more positive in promoting ICT use. They further suggested that student teachers need to work with ICT-competent teachers during teaching practice and be placed in schools with a commitment to ICT. The laptop programme was successful in giving them confidence to use technology and this experience was useful in gaining employment.

7.1.3 Perceived barriers to ICT use by NQPTs

As NQPTs, the majority raised concerns regarding the attitude of the DES inspectors to ICT. They viewed this as a major barrier to its use in their probationary year. The participants had no objections to using ICT during their probationary year, in fact a number of the participants would welcome the opportunity to display their work, provided the school had the necessary ICT infrastructure. Likewise, they discussed the lack of support from the national ICT advisory service. Not one participant in this study was contacted directly by the local ICT advisor in relation to using ICT in

teaching and learning. The in-service on offer to NQPTs was deemed irrelevant other than a few courses on video use in the classroom along with ICT and special needs. However, classroom management with ICT was cited as major issue by these young teachers. Lack of hardware and software was not an issue which seems to suggest that the Irish Government's initiative programme on supplying hardware to all schools was successful. However, the most recent report on ICT Infrastructure in Schools by Shiel and Flaherty (2006) showed that 29% of computers in Irish primary schools are over six years old.

7.2 Trustworthiness and Credibility

This study was limited in the number of participants involved and in the time spent observing. As the researcher, I feel confident in making what Stake (1995) coined the '*petites généralisations*' and what Bassey (1999) describes as '*fuzzy generalizations*' in relation to the findings within the study. The data gathered came from all school types in Ireland, ranging from large city schools to (two teacher) rural schools. The audience in Ireland for this topic is relatively small. Ireland has two large education colleges, three small and one on-line college, graduating a total of approximately thirteen hundred (1300) primary teachers per year. The ICT modules on offer in all colleges, though having individual strategies, are very similar as lecturers from all education colleges in ICT in Education in Ireland, North and South, meet annually to discuss their ICT work in each college. The majority of undergraduate education students graduating from colleges of education in Ireland will probably have experienced very comparable conditions during their teaching practice and their early years teaching. The findings from this study may be of particular interest to the ICT methodology lecturers and teaching practice supervisors in the education colleges, the

twenty one full-time national ICT advisors, the management at NCTE, the members of the Irish Primary Principals' Network (IPPN), primary school ICT co-ordinators and the DES inspectors probating NQPTs on a yearly basis. The findings might also inform the new mentoring programme established by the DES (2005) through which it is envisaged that mentors and principal teachers will replace inspectors during the probationary year in awarding the final diploma.

7.3 Limitations of this study

As discussed earlier the two main limitations of this study relate to the size of the sample and the time spent in classroom observations. Further issues arose when the researcher was unable to observe all participants owing to local situations such as young children leaving the school early and the computer lab not being available during the visit owing to unforeseen changes in the timetable on arrival on site. Unrecorded discussions with principal teachers were limited and normally took place in the corridor or in the staff room during lunch break. The analysis of the data was very personal and may be biased owing to the interest of the researcher in this topic. By presenting the actual words of the participants in Chapter Four the researcher hoped to eliminate any bias and ensure rigour and validity of the findings. A further issue is, as an outsider observing in the classroom, the behaviour of the children may have changed and the dynamic of the classroom might have been transformed giving a false image of the reality of the situation. Along with that issue all of the classroom observations took place in the afternoons when both the children and teacher were tired. However, the researcher's twenty-three years of teaching and ten years experience of classroom observation helped in seeing the real picture during the observations. While the participants were all personally known to the researcher as

students, the researcher believed that they responded to questions openly and did not give a response that they thought was the appropriate one in a student lecturer relationship. Finally, by using the Activity Theory Framework, discussed in Chapter Three, the researcher tried to ensure that all issues relating to the topic were discussed with all participants. The topics within the framework included;

- The NQPTs themselves;
- The hardware and software they use in the school;
- The school principal;
- The school's ICT policy;
- The role of the parents;
- The role of the local and school ICT co-ordinators;
- Professional Development in relation to ICT;
- The role of the inspector and the diploma day.

7.4 Recommendations

The findings of this study could develop a long list of practical recommendations. However, with the limitations listed above it is very doubtful that government or university departments would take the recommendations on board. Further work needs to be undertaken with a larger sample over a longer time frame. Yet the study did illuminate some issues and questions worthy of further discussion.

Question 1

How might NQPTs integration and infusion of ICT in teaching and learning be enhanced by specific support from the National NCTE ICT Advisory Service?

The data suggests that the NCTE is not supporting NQPTs in their first year in the teaching profession. One could theorise that NQPTs, competent and confident users of ICT, are ready and willing to accept support at this point in their career.

Question 2

In what way will DES policy encourage NQPTs to integrate ICT during their probationary year?

At present, there is very little evidence of consistency among the DES inspectors in relation to ICT during the probationary year. Many participants complained of the lack of interest and support they received from the inspectorate during their first year. Would mandatory use of ICT by NQPTs during the probationary year have a long-term effect on their use of ICT during their teaching career?

Question 3

How could ICT school policies have a positive influence on the use of ICT in the classroom?

The participants in this study suggested that the ICT school policy was of little value other than listing available software within the school. Are ICT Policies written to please the bureaucratic system within the DES and how can schools make the ICT policies more effective?

Question 4

How can Colleges of Education be proactive in relation to ICT use during teaching practice and in ICT modules delivery?

This is a very sensitive issue in many colleges, where tried and tested methods have been successful and where the faculty may be unwilling to change. The evidence suggests that Colleges need to change their approach to teaching practice, in relation to ICT use, by student teachers in the classroom. Previous studies on this topic recommend an integrated model be put in place where the students observe skilled

practitioners in the classroom and are placed in ICT rich environments during field experience.

Question 5

In what ways, if at all, does access to laptop technology at pre-service level predispose NQPTs to integrate ICT into their teaching during their first years as teachers?

Access to personal laptops seems to have been a positive factor with this particular group. However, it is impossible to generalise from such a small sample. A study involving a group without laptops at college is needed to further investigate this question.

Question 6

What ICT in-service courses should be provided for NQPTs of various levels of ICT competencies

The evidence gathered during this study indicates that NQPTs are in need of courses relating to ICT and classroom management plus courses on ICT and curriculum integration, particularly on subject specific integration.

7.5 Further Research

This study focussed on NQPTs who graduated from College with a high degree of ICT competency and skills. Further work needs to be undertaken with NQPTs who had limited access to ICT in their initial training. This study did not consider gender issues regarding ICT use by NQPTs. As the vast majority of Irish primary teachers are female, a comparative study on the work of female and male NQPTs may reveal

some interesting findings. Research surrounding the use of ICT by NQPTs working in a multicultural classroom would be appropriate as primary school teachers in Ireland are struggling to deal with this new challenge. Finally, there is a need for a large-scale quantitative study on NQPTs use of ICT that may or may not corroborate the findings of this study.

7.6 Endnote

This study attempted to tell the story of thirteen NQPTs and their use of ICT in their early years of teaching. They were a unique group in that they had personal access to technology as students and took the ICT elective module in their final year at college. They left college with positive attitudes and a favourable disposition towards ICT integration and teaching. Their stories seem to suggest that while their principal teachers, the school ICT co-ordinators, their colleagues and school community are supportive, they are not being encouraged by the very agencies entrusted to be so, namely the National ICT Advisory Service, the DES Inspectorate and many of their teaching practice supervisors during their initial teacher training.

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Appendix A

Postal Survey

Information & Communication Technologies & Newly Qualified Primary Teachers, Ireland

Dear

Thank you for agreeing to participate in this study. I realise you have a busy schedule and your time is valuable. Your help is greatly appreciated.

The aim of this postal survey is to gather basic information on your ICT experiences in your own classroom since graduating from Mary Immaculate College. As a laptop user and ICT Curriculum Option Student, I am assuming that you have all the basic skills necessary to undertake ICT integration and infusion in your classroom. However there may be other issues impacting on your use of ICT in your work.

This is an open ended type survey where you are invited to respond as frankly as possible to the items listed below. Feel free to add any other issue that may be relevant to the list. The topics for discussion are not in any particular order and should not be viewed as being less or more important because of their position on the list. On completing the survey please return it to me in the stamped addressed envelope provided by

Background information

Name [BLOCK CAPITALS] _____

School Address _____

e-mail _____

Principal [BLOCK CAPITALS] _____

Class / Classes you are teaching _____

No. of children in your class _____

Type (Mixed / Single Sex B/G) _____

No. of years teaching _____

Permanent / Temporary / Substitute _____

Topics for discussion

1. Please describe the ICT facilities in your school and/or classroom
2. Is there an ICT co-ordinator in your school?
3. Does your school have an ICT Policy document?
4. If yes, did you read the ICT Policy Document?
5. Did the ICT Policy assist you in planning your ICT programme?

6. If yes, in what way did the Policy assist you?
7. Have you met with your local ICT Co-ordinator?
8. If yes, what ICT issues were discussed?
9. Have you undertaken any In-service on ICT since graduating from Mary Immaculate College?
10. If yes, what type of In-service?
11. Have you completed your Diploma?
12. If yes, did your Inspector discuss ICT use?
13. If you are still waiting to complete your Diploma, has your Inspector discussed ICT and classroom integration?
14. In what way do you try and integrate ICT into your teaching?
15. From your classroom experience what are the perceived difficulties in integrating ICT into your daily schedule?
16. List the software you use in your teaching
17. Have you received support from your principal and colleagues in relation to ICT?
18. If yes, how was this support given and how did the support help you?
19. The Laptop Programme: In your opinion, how effective was the Laptop Programme at Mary Immaculate College, in preparing you to integrate ICT into you teaching?
20. How would you improve the Laptop Programme?
21. ICT Curriculum Option In your opinion, how effective was the ICT Elective (Year 3) at Mary Immaculate College, in preparing you to integrate ICT into you teaching?
22. How would you improve the ICT Elective?
23. What, in your opinion, are the major issues in your early teaching career that impact on your use of ICT?
24. Please use this space to make any other comment on issues not covered I n the survey.

Thank you for your time and patience in completing this pilot survey. As outlined in my original letter of the 5th of March, your anonymity will be protected and no reference will be made to you personally in any report, presentation or publication. I will contact you before the end of this school year (June 2005) to arrange a venue and time for the interview and classroom observation.

Yours truly,

Appendix B

Re: Doctoral Research

Dear

As a graduate of Mary Immaculate College who undertook ICT as your Year 3 elective and as you were a member of the laptop programme, I am seeking your assistance in a research project.

I am in the process of studying for a Doctorate in Education and am now preparing to undertake the research element that will form the basis of my thesis. This letter is intended to set out the intentions of the research project and the anticipated implications for you the teacher agreeing to take part. I would ask you to consider the details very carefully before you finally consent to participating in the study.

Research Question:

How do newly qualified primary teachers (NQPT), competent and confident users of technology, integrate ICT into their teaching during their initial teaching career?

As sub themes the study will examine:

- *How does the culture/ethos of the school impact on newly qualified primary teachers (NQPTs), competent and confident users of technology, use of ICT in their classrooms during the first two / three years of their initial teaching career?*
- *How did the laptop programme and pre-service ICT training at Mary Immaculate College, equip these NQPTs to integrate and infuse ICT into their teaching?*
- *How did the NQPTs use of technology while at Mary Immaculate College contribute to the integration and infusion of ICT during their initial teaching career?*

It is hoped that this study will provide some further insights into the needs of NQPT, with particular reference to the use and integration of ICT into their daily teaching and also provide direction for future ICT undergraduate programmes within Mary Immaculate College.

I am asking NQPTs in this study to agree to being interviewed some two or three times over the coming school year in order to explore their careers in some depth, and to those interviews being taped. Interviews will most likely take place outside of school hours. Each interview should last between one and two hours and will take place in a venue chosen by the participant. A transcript of each interview will be returned to the participant concerned prior to use in the study. A number of classroom observations will also be required with the permission of the participant and the school principal. You will be free to terminate any interview or observation at any time without consequence.

I can assure you that any taped material or observation notes will be kept secure and confidential for the duration of the research and will be returned to you or destroyed (as agreed with you) on completion of the study. Your anonymity will be protected and no reference will be made to you personally in any report, presentation or publication.

Participants will also be asked to complete a questionnaire / survey prior to the interviews.

I hope this letter clarifies the position sufficiently for you to make a decision about your participation in this research project. If you have any questions or concerns, please raise them with me. I will be happy to address any issues by e-mail, phone or letter.

Please complete the form below and return to me using the stamped addressed envelope provided by 30th April 2005.

Yours sincerely,

I hereby give my consent to participating in the study outlined above

☐

I do not give my consent to participating in the study outlined above

☐

I understand that I can withdraw from the study at any time, without consequence and am assured of the arrangements regarding confidentiality and anonymity.

Name (BLOCK CAPITALS) _____

School Address _____

Class / Classes you are teaching _____

E-mail _____

Mobile Tel No. _____

Signed: _____

Date: _____

Appendix C

Pilot Interview Schedule

Information & Communication Technologies & Newly Qualified Primary Teachers, Ireland

Tuesday June 21st 2005

*Venue: Mary Immaculate College
Time:*

Background information

Name [BLOCK CAPITALS] _____
School Address _____

e-mail _____

Principal [BLOCK CAPITALS] _____
Class / Classes you are teaching _____

No. of children in your class _____

Type (Mixed / Single Sex B/G) _____

Topics for discussion: General background

When did your interest in teaching begin?

Had you any role model that influenced you in your choice of career?

How did this person influence you?

Is teaching what you thought it would be?

Do you think that your style of teaching is different from your own teachers when
you were in primary school?

How do you think children learn in school in the 21st century?

How do teachers teach in school in the 21st century?

Discussion on ICT

When did you get interested in using ICT?

Please describe the ICT facilities in your school and/or classroom

Is there an ICT co-ordinator in your school?

Does your school have an ICT Policy document?

If yes, did you read the ICT Policy Document?

Did the ICT Policy assist you in planning your ICT programme?

If yes, in what way did the Policy assist you?

Have you met with your local NCTE ICT Co-ordinator?

If yes, what ICT issues were discussed?

Inservice + ICT

Have you undertaken any In-service on ICT since graduating from Mary Immaculate College?

If yes, what type of In-service?

Have you completed your Diploma?

If yes, did your Inspector discuss ICT use?

If you are still waiting to complete your Diploma, has your Inspector discussed:
ICT and classroom integration?

In what way do you try and integrate ICT into your teaching?

From your classroom experience what are the perceived difficulties in integrating
ICT into your daily schedule?

Have you received support from your principal and colleagues in relation to ICT?

If yes, how was this support given and how did the support help you?

The Laptop Programme

In your opinion, how effective was the Laptop Programme at Mary Immaculate College, in preparing you to integrate ICT into you teaching?

How would you improve the Laptop Programme?

ICT Curriculum Option

In your opinion, how effective was the ICT Elective (Year 3) at Mary Immaculate College, in preparing you to integrate ICT into you teaching?

How would you improve the ICT Elective?

What, in your opinion, are the major issues in your early teaching career that impact on your use of ICT?

Talk about primary and secondary school experience – teachers using ICT in both school settings

Talk about teaching practice experience and ICT in the five week practicum

Your views on ICT as a student teacher

Teaching practice experience Lesson preparation

Classroom setting

Access to ICT in the practice school

Teachers and supervisors comments on ICT during TP

Your views on the following as a classroom teacher

Relative importance of ICT in relation to other skills which teachers need such as classroom management, preparation and planning

The Value of ICT to specific subject teaching

ICT as a source of subject material and research

ICT as a learning and teaching tool

ICT as a motivator

Negative issues in relation to using ICT in your teaching

How does the culture of present / previous school help towards ICT integration

Role of Principal and ICT

Role of other teachers (Age range) and ICT

Parents / Community and ICT

Closing comments:

Appendix D

Teacher	School	Type	Class	No of children	No of years teaching	Lab	No of PCs	Broadband	LCD Projector	Laptops
Olive	LR	MC	Jun Infnts	23	3	Yes	30	Yes	Yes	2
Gretty	LU	D	1st	30	4	Yes	32	Yes	Yes	2
Blendan	SR	MC	Jun to 2nd	11	4	Yes	7	Yes	Yes	1
Aoife	LC	D	Jun & Sn Infns	17	2	Yes	26	Yes	Yes	4
Catherine	SU	G	6th	22	(Principal) 3	Yes	15	Yes	Yes	1
Valerie	SR	MC	Junior to 1st	26	2	No	8	Yes	No	1
Mary	LC	MC	Junior Infants	23	2	No	35	Yes	Yes	2
Cora	LU	G	6th	36	4	Yes	17	Yes	Yes	2
Deborah	SR	MC	3rd to 6th	25	(Principal) 3	No	3	Yes	No	2
Elayne	LC	MC	2nd	30	3	Yes	23	Yes	Yes	15
Niamh	LC	MC	5th	23	3	Yes	28	Yes	Yes	2
Lorraine	LR	MC	Resource	N/A	4	Yes	15	Yes	Yes	3
Orla	LC	D	1st	33	4	No	15	Yes	Yes	2

LR = Large Rural School

LU= Large Urban School

SR= Small Rural School

LC= Large City School

SU= Small Urban School

MC=Middle Class

D=

Disadvantage

G = Gaelscoil

Flanders Interaction Analysis Categories (FIAC)

Class	
School	
Date	
Time	
No. of children	
No. of PCs	

[illegible]

12

Appendix G

First set of 153 free codes

NVivo revision 1.2.142 Licensee: D O Grady

Project: Sheffield User: Administrator Date: 01/08/2006 - 12:36:22

NODE LISTING

Nodes in Set: All Free Nodes

Number of Nodes: 153

- 1 access at home
- 2 activity based
- 3 administration
- 4 advising teachers
- 5 age profile teachers
- 6 answerability
- 7 appropriate software
- 8 attention grabber
- 9 authoritative
- 10 Broadband
- 11 CAO
- 12 children's attitude
- 13 children more advanced
- 14 class control
- 15 class size
- 16 class teacher
- 17 classroom computer
- 18 classroom management
- 19 classroom V the lab
- 20 college at MIC
- 21 competition between schools
- 22 computer games
- 23 computer literate
- 24 confidence
- 25 constructivist approach
- 26 controlling
- 27 courses for teachers
- 28 dangers in the classroom
- 29 didactic
- 30 difficulties in integrating ICT
- 31 diploma
- 32 diploma and inspector interests
- 33 early finishers
- 34 early teaching and ICT
- 35 encouragement from the inspector
- 36 family

37	final report
38	five week TP and ICT
39	friendly
40	full-time ict teacher
41	further study
42	future and ICT
43	group work
44	hands on
45	happy
46	hobbies
47	holidays
48	home
49	I always had a love for Irish a
50	ICT and bright children
51	ICT and full-time school coordinator
52	ICT and motivation
53	ICT and special needs
54	ICT as a full subject
55	ICT driving force
56	ICT elective at MIC
57	ICT exemplar lessons
58	ICT In-service
59	ICT integration
60	ICT learning and teaching
61	ICT maintenance
62	ICT networks
63	ICT policy and NQPTs
64	ICT policy not available
65	ICT school schemes and teachers
66	ICT skills
67	importance of ICT
68	improve the laptop programme
69	in-service other than ICT
70	inspector negative response
71	inspector positive
72	interest in ICT begin
73	interest in teaching
74	interest in teaching from childhood
75	lack of concentration
76	lack of drive
77	lack of facilities
78	laptops and ICT positive
79	laptops at MIC
80	LCD projector
81	leaving teaching
82	making demands
83	male teacher
84	mandatory ICT and NQPTs
85	mature student
86	mentoring

87 more time
88 mother
89 multi-class
90 multi-class setting
91 multimedia
92 NCTE coordinator
93 NCTE coordinator year one
94 negative impact
95 NQPTs and status
96 only with Pedop in ICT
97 pair work
98 parents
99 parents and ICT
100 parents positive about ICT
101 planning
102 poor teaching
103 positive and ICT
104 positive attitude in the school
105 positive impact
106 post grad ICT
107 post grad other than ICT
108 pressure at work
109 previous teachers influence
110 principal and ICT
111 reporting to principal on ICT use
112 research
113 resources
114 role model
115 role of ICT coordinator
116 rote learning
117 sarcastic
118 school and community
119 school culture
120 school ICT coordinator
121 school ICT policy
122 school visits and ICT
123 school without ICT
124 scouts
125 secondary school
126 security
127 SESE and ICT
128 SNAs and ICT
129 specific subjects and ICT
130 sport
131 structured time and ICT
132 take away ICT
133 teacher enthusiasm
134 teacher peer tutoring and ICT
135 teacher recognition
136 teachers' use of ICT

137	teachers' dress code
138	teaching and learning with ICT
139	teaching beliefs
140	teaching in the 21st century
141	teaching style
142	teaching today
143	television and computer games
144	time for preparation
145	TP supervisor
146	transition year
147	typical teacher
148	use laptops in ICT class
149	way of life
150	weak class
151	website design
152	www and lessons
153	young principal

3.14.2 Phase Two: Creating Trees

Having completed the first phase of analysis the researcher re-read and created a set of TREES redefining the data from phase one

NVivo revision 1.2.142 Licensee: D O Grady

Project: Sheffield User: Administrator Date: 01/08/2006 - 12:41:27
NODE LISTING

Nodes in Set: All Tree Nodes

Number of Nodes: 218

- 1 (1) /Inspector
- 2 (1 1) /Inspector/diploma
- 3 (1 2) /Inspector/diploma and inspector interests
- 4 (1 3) /Inspector/encouragement from the inspector
- 5 (1 4) /Inspector/final report
- 6 (1 5) /Inspector/inspector negative response
- 7 (1 6) /Inspector/inspector positive
- 8 (2) /ICT Mandatory
- 9 (2 1) /ICT Mandatory/mandatory ICT and NQPT's
- 10 (3) /NCTE Coordinator
- 11 (3 1) /NCTE Coordinator/NCTE coordinator
- 12 (3 2) /NCTE Coordinator/NCTE coordinator year one
- 13 (3 3) /NCTE Coordinator/broadband
- 14 (4) /ICT Policy
- 15 (4 1) /ICT Policy/ICT policy and NQPTs
- 16 (4 2) /ICT Policy/ICT policy not available
- 17 (4 3) /ICT Policy/ICT school schemes and teachers
- 18 (4 4) /ICT Policy/school ICT policy

- 19 (4 5) /ICT Policy/broadband
- 20 (4 6) /ICT Policy/ICT networks
- 21 (4 7) /ICT Policy/ICT maintenance
- 22 (4 8) /ICT Policy/school culture
- 23 (5) /ICT and Teaching and Learning
- 24 (5 1) /ICT and Teaching and Learning/appropriate software
- 25 (5 2) /ICT and Teaching and Learning/attention grabber
- 26 (5 3) /ICT and Teaching and Learning/children's attitude
- 27 (5 4) /ICT and Teaching and Learning/children more advanced
- 28 (5 5) /ICT and Teaching and Learning/class control
- 29 (5 6) /ICT and Teaching and Learning/class size
- 30 (5 7) /ICT and Teaching and Learning/classroom computer
- 31 (5 8) /ICT and Teaching and Learning/classroom management
- 32 (5 9) /ICT and Teaching and Learning/classroom V the lab
- 33 (5 10) /ICT and Teaching and Learning/computer games
- 34 (5 11) /ICT and Teaching and Learning/constructivist approach
- 35 (5 12) /ICT and Teaching and Learning/dangers in the classroom
- 36 (5 13) /ICT and Teaching and Learning/didactic
- 37 (5 14) /ICT and Teaching and Learning/difficulties in integrating ICT
- 38 (5 15) /ICT and Teaching and Learning/early finishers
- 39 (5 16) /ICT and Teaching and Learning/full-time ICT teacher
- 40 (5 17) /ICT and Teaching and Learning/ICT and bright children
- 41 (5 18) /ICT and Teaching and Learning/ICT and motivation
- 42 (5 20) /ICT and Teaching and Learning/ICT as a full subject
- 43 (5 21) /ICT and Teaching and Learning/ICT driving force
- 44 (5 22) /ICT and Teaching and Learning/ICT exemplar lessons
- 45 (5 23) /ICT and Teaching and Learning/ICT integration
- 46 (5 24) /ICT and Teaching and Learning/ICT learning and teaching
- 47 (5 25) /ICT and Teaching and Learning/ICT skills
- 48 (5 26) /ICT and Teaching and Learning/importance of ICT
- 49 (5 27) /ICT and Teaching and Learning/multi-class
- 50 (5 28) /ICT and Teaching and Learning/multi-class setting
- 51 (5 29) /ICT and Teaching and Learning/poor teaching
- 52 (5 30) /ICT and Teaching and Learning/pressure at work
- 53 (5 31) /ICT and Teaching and Learning/resources
- 54 (5 32) /ICT and Teaching and Learning/research
- 55 (5 33) /ICT and Teaching and Learning/SESE and ICT
- 56 (5 34) /ICT and Teaching and Learning/SNAs and ICT
- 57 (5 35) /ICT and Teaching and Learning/specific subjects and ICT
- 58 (5 36) /ICT and Teaching and Learning/structured time and ICT
- 59 (5 37) /ICT and Teaching and Learning/teacher enthusiasm
- 60 (5 38) /ICT and Teaching and Learning/teaching and learning with ICT
- 61 (5 39) /ICT and Teaching and Learning/time for preparation
- 62 (5 40) /ICT and Teaching and Learning/weak class
- 63 (5 41) /ICT and Teaching and Learning/www and lessons
- 64 (5 42) /ICT and Teaching and Learning/administration
- 65 (5 49) /ICT and Teaching and Learning/planning
- 66 (5 50) /ICT and Teaching and Learning/rote learning
- 67 (5 54) /ICT and Teaching and Learning/multimedia
- 68 (5 56) /ICT and Teaching and Learning/LCD projector

69	(6) /ICT School Coordinator
70	(6 1) /ICT School Coordinator/broadband
71	(6 2) /ICT School Coordinator/ICT and full-time school coordinator
72	(6 3) /ICT School Coordinator/reporting to principal on ICT use
73	(6 4) /ICT School Coordinator/role of ICT coordinator
74	(6 5) /ICT School Coordinator/structured time and ICT
75	(6 6) /ICT School Coordinator/teacher peer tutoring and ICT
76	(7) /ICT parents, community
77	(7 1) /ICT parents, community/access at home
78	(7 2) /ICT parents, community/children's attitude
79	(7 3) /ICT parents, community/children more advanced
80	(7 4) /ICT parents, community/competition between schools
81	(7 5) /ICT parents, community/ICT maintenance
82	(7 6) /ICT parents, community/making demands
83	(7 7) /ICT parents, community/parents
84	(7 8) /ICT parents, community/parents and ICT
85	(7 9) /ICT parents, community/parents positive about ICT
86	(7 10) /ICT parents, community/school and community
87	(8) /ICT and Principal
88	(8 1) /ICT and Principal/administration
89	(8 2) /ICT and Principal/advising teachers
90	(8 3) /ICT and Principal/competition between schools
91	(8 4) /ICT and Principal/ICT and full-time school coordinator
92	(8 5) /ICT and Principal/ICT driving force
93	(8 6) /ICT and Principal/lack of facilities
94	(8 7) /ICT and Principal/mentoring
95	(8 8) /ICT and Principal/positive attitude in the school
96	(8 9) /ICT and Principal/principal and ICT
97	(8 10) /ICT and Principal/reporting to principal on ICT use
98	(8 11) /ICT and Principal/young principal
99	(9) /Interest in teaching
100	(9 1) /Interest in teaching/class teacher
101	(9 2) /Interest in teaching/family
102	(9 3) /Interest in teaching/holidays
103	(9 4) /Interest in teaching/hobbies
104	(9 5) /Interest in teaching/home
105	(9 6) /Interest in teaching/I always had a love for Irish a
106	(9 7) /Interest in teaching/interest in teaching
107	(9 8) /Interest in teaching/interest in teaching from childhood
108	(9 9) /Interest in teaching/male teacher
109	(9 10) /Interest in teaching/mother
110	(9 11) /Interest in teaching/previous teachers influence
111	(9 12) /Interest in teaching/role model
112	(9 13) /Interest in teaching/scouts
113	(9 14) /Interest in teaching/secondary school
114	(9 15) /Interest in teaching/sport
115	(9 16) /Interest in teaching/teacher recognition
116	(9 17) /Interest in teaching/teachers' dress code
117	(9 18) /Interest in teaching/transition year
118	(9 19) /Interest in teaching/way of life

119	(9 20) /Interest in teaching/CAO
120	(9 21) /Interest in teaching/security
121	(10) /Interest in ICT
122	(10 1) /Interest in ICT/college at MIC
123	(10 2) /Interest in ICT/family
124	(10 3) /Interest in ICT/interest in ICT begin
125	(10 4) /Interest in ICT/secondary school
126	(11) /Teaching Style
127	(11 1) /Teaching Style/activity based
128	(11 2) /Teaching Style/authoritative
129	(11 3) /Teaching Style/confidence
130	(11 4) /Teaching Style/constructivist approach
131	(11 5) /Teaching Style/controlling
132	(11 6) /Teaching Style/didactic
133	(11 7) /Teaching Style/hands on
134	(11 8) /Teaching Style/group work
135	(11 9) /Teaching Style/pair work
136	(11 10) /Teaching Style/previous teachers influence
137	(11 11) /Teaching Style/role model
138	(11 12) /Teaching Style/rote learning
139	(11 13) /Teaching Style/sarcastic
140	(11 14) /Teaching Style/teacher enthusiasm
141	(11 15) /Teaching Style/teaching style
142	(12) /ICT and In-service
143	(12 1) /ICT and In-service/age profile teachers
144	(12 2) /ICT and In-service/computer literate
145	(12 3) /ICT and In-service/further study
146	(12 4) /ICT and In-service/ICT In-service
147	(12 5) /ICT and In-service/leaving teaching
148	(12 6) /ICT and In-service/mentoring
149	(12 7) /ICT and In-service/post grad ICT
150	(12 8) /ICT and In-service/post grad other than ICT
151	(12 9) /ICT and In-service/teacher peer tutoring and ICT
152	(12 10) /ICT and In-service/courses for teachers
153	(13) /Teaching Today
154	(13 1) /Teaching Today/activity based
155	(13 2) /Teaching Today/administration
156	(13 3) /Teaching Today/answerability
157	(13 4) /Teaching Today/children's attitude
158	(13 5) /Teaching Today/children more advanced
159	(13 6) /Teaching Today/class control
160	(13 7) /Teaching Today/class size
161	(13 8) /Teaching Today/class teacher
162	(13 9) /Teaching Today/FUTURE AND ICT
163	(13 10) /Teaching Today/ICT skills
164	(13 11) /Teaching Today/importance of ICT
165	(13 12) /Teaching Today/leaving teaching
166	(13 13) /Teaching Today/making demands
167	(13 14) /Teaching Today/multi-class setting
168	(13 15) /Teaching Today/multi-class

- 169 (13 16) /Teaching Today/poor teaching
- 170 (13 17) /Teaching Today/pressure at work
- 171 (13 18) /Teaching Today/teacher recognition
- 172 (13 19) /Teaching Today/teaching beliefs
- 173 (13 20) /Teaching Today/teaching in the 21st century
- 174 (13 21) /Teaching Today/teaching today
- 175 (14) /Student Teacher laptops and ICT
- 176 (14 1) /Student Teacher laptops and ICT/college at MIC
- 177 (14 2) /Student Teacher laptops and ICT/five week TP and ICT
- 178 (14 3) /Student Teacher laptops and ICT/ICT elective at MIC
- 179 (14 4) /Student Teacher laptops and ICT/ICT exemplar lessons
- 180 (14 5) /Student Teacher laptops and ICT/improve the laptopprogramme
- 181 (14 6) /Student Teacher laptops and ICT/laptops and ICT positive
- 182 (14 7) /Student Teacher laptops and ICT/laptops at MIC
- 183 (14 8) /Student Teacher laptops and ICT/mentoring
- 184 (14 9) /Student Teacher laptops and ICT/only with Pedop in ICT
- 185 (14 10) /Student Teacher laptops and ICT/school visits and ICT
- 186 (14 11) /Student Teacher laptops and ICT/school without ICT
- 187 (14 12) /Student Teacher laptops and ICT/TP supervisor
- 188 (14 13) /Student Teacher laptops and ICT/use laptops in ict class

Appendix H

Document 'Transcript of Interview with Aoife', Paragraphs 139-141

I think ICT is pivotal, there are so many jobs where people go in working nine to five in front of a computer and the fact that only an hour a week is done in some schools on a computer means that it is a very short sighted view, I think that the fact there is no curriculum for ICT is one of the things that hinder the full integration of ICT into schools, I think it's a fact that there is this big scary idea that the computer can come into the classroom and that teachers have to teach it when they have no prior in-service done or that they have to be the agents that are going to do that and that they have to force themselves to get on this bandwagon now, but I think that ICT is very important in teaching.

Document 'Transcript of Interview with Brendan', Paragraph 28

Books still play an important part in learning but I would consider the computer as important a tool in research and learning.

Document 'Transcript of Interview with Catherine', Paragraphs 180-182

I think its importance is growing, it's being mentioned more and more, it's being well advertised, courses are constantly on offer, companies offering computers for schools , I'd say in ten years time it will everywhere. I'm not fantastic on the computer, all I know is what I learned in College and I haven't gone on to learn any more only what I picked up through the years. I use the web for my research and also for the school plans.

Document 'Transcript of Interview with Cora', Paragraph 127

I don't see it as an important tool, computers aren't a big deal, they all have computers at home, they all have tons of DVDs, they all know how to use them, some of the children know more than me at this stage, so school isn't the only place they learn, in fact I think they hardly learn anything in school about ICT, its all at home, I expect an awful lot of the work to be typed up at home and if they haven't a printer at home they can print it out at school, and that's for all subjects so they have to physically sit in front of the computer at home and type it out.

Paragraphs 182-184

It is hugely important because as soon as they leave primary and secondary school they will be exposed to it, I think we should expose the children to ICT but not take total responsibility for it, like when they leave primary school they should have ABC covered, thanks to us, home needs to take a huge responsibility for getting a computer and make them [the children] use it, I try link home and school and get them to do stuff on the

computer at home in that it's going that way in that everything isn't going to be written on paper.

Paragraphs 198-200

The web is very good to teach as they will go and find information for themselves and I'd expect them to do that, the software on the US states was very good, instead of they having to go and just learn from a book, because it is more interactive and there is a game involved and there is a great push to get it correct so you concentrated more.

Document 'Transcript of Interview with Deborah', Paragraphs 100-102

I think it is very important that the children will be able to use ICT, that they would learn basic skills and that they would enjoy it and feel confident about doing things.

Paragraphs 149-151

For me as a teacher in preparing stuff, having the web to get resources, or doing a class project and having the www, we need it [ICT].

Document 'Transcript of Interview with Denise', Paragraphs 131-133

It is really important as a reinforcement tool. If they [the children] haven't picked up the sounds from the phonics the computer will then revise and reinforce. They concentrate harder at the computer, for example in matching numbers they want to do it quicker and get a higher score than their friend got [motivation] and also in preparing them for life after school. I suppose I would give it 6 out of 10 as a necessary item in the classroom.

Document 'Transcript of Interview with Elayne', Paragraphs 132-134

Well, we are living in a very technical age where everyone has to press the button and follow instructions so I think it is extremely important and parents are very aware because they ask at the incoming class meeting every June, you are bound to have one parent at least, ask you about our ICT policy and do we have a computer room [this is a senior school, children enter at second class age 7/8] and I think it's very important that children are exposed to all the various skills and especially for the weaker children because they achieve in the computer room where they normally achieve in the classroom, for example I have a child with dyslexia and she finds it easy to follow instructions from the computer pressing the right buttons, I feel its very important for the weaker child.

Document 'Transcript of Interview with Gretty', Paragraphs 133-135

It's important that you give it to the children as a tool because they are going to need it, it's very important for the brighter children in that you can challenge them with extra work I do feel it is as important as other areas within the curriculum.

Document 'Transcript of Interview with Lucy', Paragraphs 153-156

It is very important. The children are living in a technical world and they must be able to use the stuff [technology], as well as that I could teach music there, sometimes I'm woeful but with my software I can get them interested, and that has got to be positive, I'm looking forward to getting broadband so that in Geography I can show them other countries, I came across a site on hedgehogs and we could see the baby hedgehogs getting fed, and then I had a little book on hedgehogs and this year the children really saw the colours of the actual hedgehog in real life. I use ICT to work on phonics. I put the letters on the screen with the sound and the children repeat the sound [this lesson was presented during observation] this saves time in me making out charts and so on.

Document 'Transcript of Interview with Noreen', Paragraphs 120-122

I think it's a great tool to have because of the variety of ways you can use it, like Publisher, it gives the children a chance to write and present in a different way and they can see straight away if there is a spelling mistake as they type it in. It is handy as a teaching tool but having said that it should never be compulsory because when things go wrong it really upsets things and they do go wrong, if we didn't have computers there are so many children with PCs at home that they would get it anyhow but then of course they might just use games with no educational benefit, they might never use PP, Pub and they are skills that they will need later on.

Document 'Transcript of Interview with Vivienne', Paragraphs 120-122

As a motivator really, pupils are really interested in it, they like doing it and it makes things more interesting rather than, and of course they are active as well, which is more interesting for them, it's the way of the future and it's very important that they would be competent using it and it's everywhere and for families that don't have a computer at home it's important that they get it at school, I'd say a lot of the children have computers at home but may not be allowed use them and then some of them are big into it, in first class this morning a girl came in with something typed out and she wanted to show it to me, most of the children here are from a comfortable background.

Appendix I

Interview data from participants

Comments from Aoife

Aoife, Paragraphs 9-11,

My mother is principal teacher and my grandmother before her was a teacher as well, so I think when I was in primary school in about third or fourth class, my mother taught me and I just realised it was an ideal job, I think it was the scope of it, it was how many variations and how many things you could do within the class.

Aoife, Paragraph 11,

I have a lot of self control so and I think I'm very controlling sometimes with the children, I find it very hard to let go and let them work away on their own without involving me,. I think it is the influence of my own teachers that influence me.

Aoife, Paragraph 130,

The school was very computer orientated and all the computers were networked so the teachers submitted all their schemes and reports to the principal through the school network, the school didn't have a computer lab but had a computer in each classroom and all the computers were being set up for broadband so my class for TP was very able and I did a lot of project work with them.

Aoife , Paragraph 137,

No, never. I used PowerPoint slides for my Irish lesson , printed off onto an acetate sheet and used the OHP and I think my supervisor gave a commendation on my use of resources, that was the only link with computers but there was no mention of ICT otherwise.

Comments from Gretty

Gretty, Paragraph 12,

My mother is big into Score [A national musical and drama competition for young people] she was never a teacher but had a great way with children and I was involved and saw the fun she was having, she never hated going down on Friday or Saturday to work with the children.

Gretty, Paragraph 21

Yes, I was in two schools while I was growing up, one a two teacher school and the other a four teacher school. The teachers in the two teacher school taught just like I teach now, it was a lot more personal in the small school with a lot more activity whereas in the four teacher school they stayed with the same books and schemes for years, the teachers in the small two teacher school, though they seemed old at the time were open to change, they always organized things after school. They had group work going all the time, with juniors up to second in one room and the rest in another, they seemed to teach effortlessly.

Gretty, Paragraphs 128-130,

Well I did my notes, a lot of worksheets as there wasn't a photocopier in the school, I used it as a management tool. I didn't have any ICT facilities in my class or school during TP and I never saw ICT being used at any time. However the teacher and the supervisor were very positive about the way I presented my notes and the worksheets, particularly the supervisor.

Gretty, Paragraphs 94-96,

This gave us a more in depth insight as to what was going on in schools, I think it might be better if we could have gone to a school and really see ICT being used in a classroom setting instead of just hearing about it. I never saw a school computer lab in action while I was in the College.

Gretty, Paragraph 87,

Using the laptop was about the only time we got examples of how to use it. I'd say if I didn't have it I wouldn't be using it now. I might be beginning to use ICT now but not straight away after college like I did.

Comments from Deborah

Deborah, Paragraph 15

I had some excellent teachers in secondary school, Music, Science, Latin and History teachers who inspired me. I always looked up to them. They were experts in their field and I really felt they were giving of their knowledge of the world in general and they were very good teachers and they treated us [the students] with a lot of respect even though we were young, they made us feel like equals.

Deborah, Paragraphs 41-44,

I remember going to College, I was looking for Control Alt and Delete, where are those buttons so once I found them I spent six hours on the www that day and I was hooked, brilliant and we spent hours e-mailing each other across the hall, great fun.

Deborah, Paragraph 140,

I'm not as nice as I used to be. I was a very nice person with the children in my last school, I really got on well with them and it wasn't that they were nicer children or anything and I came along to this school and you have to be a certain way and I'm not very good at putting on an act at being very cross, I work with children not in a cross way but you have to be a little bit different you know, so I find it hasn't being good for my teaching, I found myself under pressure last year when I started off from not knowing what I should be doing, not knowing what I should do with five classes and not knowing about all the paper work and getting under pressure with forms and things like that spending hours here after school when I shouldn't have.

Deborah, Paragraphs 95-97,

We were never encouraged to use it, nobody ever mentioned using ICT, in fact if we had been using ICT in a realistic situation during TP, supervisors would have given out to us, I had a computer in the classroom but I didn't have time to use it.

Deborah, Paragraphs 91-93,

By the end of that course I felt really confident about using PowerPoint and Front Page but a bit more on how you explain to children how you to use technology because essentially all it is telling children how to press buttons, maybe more guidance on how to make it [ICT] more child friendly.

Comments from Cora

Cora, Paragraph 13,

I always liked my sixth class teacher, he was very cross and a lot of people didn't like him but he had a great personality and I was mad about him, both my parents are teachers so everything I saw and heard was teacher based.

Cora, Paragraph 57,

We got a computer at home when I was around six or seven when nobody had a computer and my older brother was into them so dad bought him one and he took lessons and came back and showed me the bits he had learned so there was always a computer at home.

Cora, Paragraphs 104-114,

Yes, when I started here the ICT co-ordinator was in the school and we had an INTEL course and I did that but I only lasted two weeks because it was too basic. All the teachers on the course were asking me could I do this and that and I got a free copy of MS Office for attending the course. I realised that the course was too basic so I needed something else so I didn't do anymore until I became ICT co-ordinator and then I did a

networking course in the local Education Centre. I would not have done that course unless I was the co-ordinator, as I didn't have a clue about networks, the presenter was very good and he did another course a few months later on general troubleshooting and I did that over three Saturdays and it was also very good.

Cora, Paragraphs 25-27,

I am enjoying it. I was talking to my cousin the other day, she is a teacher as well, and we were both saying that we love it, we both get up every morning and we don't dread going into work. There are parts of the job that would be easier and other parts harder, things I wasn't prepared for when I came out, I wasn't prepared for parents, meeting them and they cutting in to you, but you get braver as the years go on, you take everything the first year and nod your head and then later you throw in your own comments but that comes with experience.

Cora, Paragraphs 160-162,

I'd spend half the time developing their own skills as you can't teach it unless you know it yourself and the other half designing lessons that you would use in a classroom.

Comments from Catherine

Catherine, Paragraphs 13-15,

I had a German teacher in secondary school and I wanted to be like her, I had no real role model in primary school. I have no teachers in the family. A typical teacher is musical arty, that's the way I am, outgoing, I think I had all the characteristics.

Catherine, Paragraphs 9-11,

I always had a love for Irish and that one day I'd go teaching Irish, I was always veering towards teaching and teaching was my first choice on my CAO.

Catherine, Paragraph 164,

I do find at times that the principal-ship affects my class teaching, you could have twenty messages on the phone and four or five people outside the door waiting to speak to you and then a parent could pop in the middle of you trying to teach a class and when you are in and out the children can get agitated, it is very hard for teaching principals.

Catherine, Paragraphs 22-24,

I'm surprised of the recognition we get from people, I mean, sometimes I think they believe we are babysitters and that kind of upsets me a small bit, we get it from parents and society in general.

Comments from Brendan

Brendan, Paragraphs 7-9

It probably began when I started thinking about my choice of career, probably when I started my Leaving Cert course in secondary school, and I looked at what both my mother and sister were involved in, so I took their choice [primary teaching] on board and thought it might be the one for me. It was my first choice on my CAO. Both my mother and sister attended the same College [MIC] as I was interested in going too and they would have come back with their own ideas and impressions of the place, it seemed like, from my perspective that it was the one I was interested in as I'm also interested in the GAA [National Sporting Organisation, Football & Hurling] and it looked like a good idea to mix both [Teaching and Sport].

Brendan, Paragraph 13,

A real thought that there would be a real secure job there for you, I am a male and that would mean when I got out that I wouldn't have much difficulty in getting a job, that was at the back of my head too, you know.

Brendan, Paragraph 23,

What I witnessed growing up in school as regards classroom management is similar to what I do here, very little difference between the two.

Brendan, Paragraphs 25-28,

A lot of what I did in school was through rote learning and books, that was the extent of it, there was no ICT, there was no access to audio visual material, it was all rote from the book. Books still play an important part in learning but I would consider the computer as important a tool in research and learning.

Comments from Elayne

Elayne, Paragraph 12,

After school I always walked up to his school. I was very familiar with the classroom and the classroom setup and I was probably in awe of simple things like writing on the blackboard.

Elayne, Paragraph 16,

She was very focused and motivated and she totally changed my attitude towards school, she was very organised, methodical and you knew where you were going, everything was doable and she simplified everything.

Elayne, Paragraph 12,

I know I shouldn't focus on that but the idea of the holidays, we would have travelled every summer, my mother is self employed , so it worked out pretty well, so we took off every July and saw a lot of Europe.

Elayne, Paragraphs 42-44,

We had one computer in seventh class so I was picking up a little at that stage from the teacher, she had an interest in ICT at the time but we didn't do any ICT at secondary school for five years , so at MIC I didn't know how to even turn on a computer but my interest would have come at that stage because of Dad, he was giving evening courses and the first few weeks of MIC are very easy going, so Dad was giving an evening course to a group of parents so I decided I would go and sit down and learn something.

Elayne, Paragraph 21,

Paper work drives me daft, once a month I stay behind on a Friday and do a blast of paperwork and its all about accountability I can understand where they are coming from but it sounds ideal and it's fantastic on paper, school schemes and school plans, and monthly reports, so teaching is definitely not what I thought it would be.

Comments from Mary

Mary, Paragraphs 27-29,

She was brilliant, she loved everything, it was an all female staff and I was sporty from a young age and there wasn't a huge emphasis on sport, it was all women, not to be sexist but to a point, it was difficult to get involved, but she always did something with us in the hall, and I remember she taught us an ABBA song 'I have a dream' and I have big fixation with ABBA ever since and I can definitely put that down to her, she was fun and I loved going to school when I had her. I can't remember anything negative about her and I met her since on an In-service day and she looked at me and said 'I taught you in third class and it seems like only yesterday and now you are a teacher'. I went back to that school on my TP and I really can't remember anything bad about her at all.

Mary, Paragraph 9,

My Dad is a teacher and my uncle is PE teacher in a secondary school, so teaching was always an interest and as far back as third class I felt I wanted to be a teacher. I loved my third class teacher and it never wavered from then.

Mary, Paragraph 20,

My Dad definitely, I could see myself growing up that Dad was always the one who did the homework with us and spent the most time with us.

Mary, Paragraphs 82-85,

It was always there. In secondary school we had a computer room that we could use at lunch times. This was pre-internet days. So when I went to College the interest really picked up because the Internet was in, even though people didn't have in their homes in

2001 but when I went to College and we had the labs and you could check your e-mail everyday instead of every week. I use to go an internet café in town because we didn't have the www at home and then with the various lectures it was amazing to see the resources that were out there. Google wasn't very well known back then and now if I'm looking for any kind of worksheet you won't get one but get hundreds, once I saw the value of it I really got hooked.

Mary, Paragraphs 198-206,

I did my five week TP in the school I was in last year and we didn't have the facilities we had in the school last year and as far as I know they were taken out in two groups and it would have been one of the ICT co-ordinators who took them for computers.

I remember there was an issue with one supervisor, he thought I was copying them, my Irish lessons, but he didn't look properly at them to see they weren't being added to every week, there seems to be a lack of trust and total suspicion around computers and I think it's bad because are they aware of the training young people are getting in computers, no one is going to go far in any job without computer training because its in everything.

Mary, Paragraphs 176-178,

I really enjoyed that, I thought it was great, the website design , I'm dying to get an older class at some stage, I'd love to do a website with them. The way we did it was so simple and you could make it as good as you wanted, I remember spending hours on Fireworks trying to improve buttons for going down the side of the pages you could and we did get addicted to it, a group of us wanted the best and it was great to have such a wide variety as we looked at the different parts of Office we could use, the class list in an Excel document and publishing the newspaper was brilliant but a lot of the work we did is not possible for Junior Infants.

Mary, Paragraphs 171-173,

It was great to be able to hook the laptop and get the network in the College and go on the LAN, that was very handy because with the numbers looking for computers you didn't have to wait around so it was great to just plug in for assignments and whatever. There were a lot more points put in to the student lounge.

Mary, Paragraph 42,

I was involved in a NQPT scheme, the DES piloted it this scheme last year, it was brilliant. I was mentored, I was lucky because the other NQPT in the school, her mother teaches in the school as well, we were very lucky because we knew the school so well and our mentor was a good friend as well so we got the best of help.

Mary, Paragraphs 76-79,

I share a lot of Dad's beliefs. Dad always says that if you bring the child on 5% academically in a year, that's great but that if the child is happy to come to school, that's

far more important, his big belief is about the child's overall happiness, he believes that academia comes second and I think that's a real nice way to think rather than in today's world trying to get ahead and trying to be the best and people aren't necessarily happy for it, a child's happiness is definitely important to me.

Comments from Linda

Linda, Paragraphs 8-11,

I suppose in secondary school, I thought I might like it and I always liked working with children and I also had a great teacher in 4th class that influenced me a lot, she was really nice.

Linda, Paragraph 15,

Well a lot of it really was Irish, basically we spoke Irish for the whole time in her class and she had a great way of teaching verbs that I have used since in my own teaching when I had a class, this teacher influenced a lot of people in her class including my sister. I did German in College, that's why I went to Limerick as opposed to Dublin.

Linda, Paragraphs 40-42,

Well to be honest I hated computers and we did computers in transition year in secondary school and I use to hate it and have no interest, it was the most boring thing and I knew nothing about them and we didn't have a computer at home, I suppose I didn't understand them and I was just avoiding them and then when I went to College , with the laptop scheme, we were the very first year of that scheme , you could still handwrite things when I started , we didn't really need computers but my Mam and Dad reckoned that it was the way forward and it would be good for me. I never had an interest in computer Nintendo games, they were around when I was in secondary school but I wouldn't have the patience to play them, I didn't even know how to use the internet or log on to the college email, we didn't have mobile phones , I sound old and yet it was only a few years ago, it was only during second year that we started getting phones.

Linda, Paragraphs 157-163,

I had first class and they didn't have a computer in the classroom. In terms of my actual teaching I don't think I did, I used ICT for making resources and for my lesson notes and of course all my notes now are done on the laptop. It makes no sense to be writing them out.

Linda, Paragraphs 133-135,

I found it useful because I didn't know how to use a PC before the laptop programme, if it wasn't for the laptop programme I'd still be struggling in some ways, I know you had to learn but if I had to go to a computer lab in the college I wouldn't have the time . It really helped me in the job, at home I have broadband some people might say its €40 a month but I can't manage without it, but I have got a lot out of it and I would say it was

due to the laptop programme, I wouldn't have taken the 3rd Year ICT option only because I had the laptop, I really wouldn't have, I would have done something else.

Linda, Paragraphs 84-88,

I did, ICT and Learning Support, I had signed up for a PE Course but when I changed jobs to Learning Support I took that course and I was interested in the topic and what software would be available and suitable. I did the Lego Mindstorm Course last year and they were organized by the education centre. I always wanted to do the Lego course as I was using Meccanno in my class and the boys loved it. We have three sets of the Lego, I put two sets into 6th, we have 18 boys, and I divided them into groups of three and two boys knew how to use it, they showed the others and do it during break time or lunchtime, I show them how to programme it and they show the others, its like an add on to the day, it definitely links with science because of the levers and pulleys and with English because of the oral language and communication and team building and then when they are finished they have to present what it is and they are video taped presenting their work and then they show the item working, all children in sixth class get to do this, we are on the last group now and some of the fifth class are doing it as well, the systems are only on loan so they must go back soon to the Education Centre. I'm also doing a Masters and last year I had to pick a topic for the diploma so I took Technology. It was only a minor topic so it was mainly about the future of technology and what is out there ahead of us, I did my work on software. The material wasn't useful in a classroom setting, it was education linked but not on how you would use it in the classroom, that course was every weekend and this year we are deciding on our final thesis, I haven't fully decided yet what I'm going to do.

Linda, Paragraph 27,

I think they are used to having everything now, there is no waiting for anything, basically most of the children here get everything they want, there is no waiting? , if they want an iPod they will get it, most of them have play stations and televisions in their rooms and they are all instant gratification for thing, if you are trying to do something that they have to work on or wait, and they are not going to be finished in ten minutes its hard for them to accept that. Things take time to do and their interest levels seem to be gone. They don't seem to have the same attention span, maybe I was like that at that age, but it seems they have a much shorter attention span because everything is so instant now.

Linda, Paragraph 31,

I think the time isn't there in the evenings for doing the homework, both parents are working and it's later when the children are getting the work done, it seems to be more of a struggle.

Linda, Paragraphs 34-36,

I think it is a very important job that gives one a huge influence on children, if you think about the amount of children's lives you are going to touch over your career, you have a very big influence, children will go home happy if they get on well for the day, in any way, whether they had a joke with you or whether they get on well in school matters that

will affect them as well. As teacher I hope to be fair, that's a big thing, and that the children came on and learned to the best of their ability, not necessarily academically, if you're good at sport or say drama, that I would notice those talents and develop confidence and competence in the children in whatever they are doing, I mean everybody is good at something, because our education system seems to be promoting academic subjects that doesn't mean that its all about academic work. I spend a lot of time doing spellings with children and I use different learning styles, I have a child who just can't sit still and if I get him doing his work through actions he will know his spellings but if you put it up on the board or write it he will not do it, so I change my style to suit him.

Comments from Noreen.

Noreen, Paragraphs 5-7,

When I couldn't get into nautical science and industrial design, seriously. I'm a cub scout leader for the last seven years and I like working with children so I thought I'd try teaching, teaching was first on my CAO but I would have preferred nautical science, but I haven't got very good sea legs anyway, and I had to go to a compulsory advisory session for nautical science and I had mild asthma so I wasn't let through the interview and I also had industrial design and I went for the interview in the National College of Art and Design in Dublin but my portfolio was an art portfolio and not a design one so I didn't get through the interview, I would love to go back, but teaching is so varied and has a lot of different subjects and I do like working with children and I'm still working with the scouts and cubs here in Douglas.

Noreen, Paragraph 11,

I had a teacher in 4th and 5th, we were in a small country school and we had the old school with fireplaces, though not in use at the time, and he took us out to Sherkin Island, which was almost unheard of at the time, he held a fair to raise funds for a microscope and he was big into the environment and nature study as well.

Noreen, Paragraphs 40-42,

In third year in secondary school. I was doing technology and I needed access to a computer at home. Our technology reports had to be typed so my technology teacher brought me home to her house for the night and I did up my report and she suggested that if I really pushed I might have a computer for Christmas. So we got a computer at home that year and have since upgraded. I spent two summers, while at school, 4th and 5th year, showing local people how to use the computer and the internet in the town library. During my second summer I arranged courses on e-mail and the internet in the library.

Noreen, Paragraphs 112-118,

INT *Did you have access to ICT during your final five week TP?*

- N No, only my own laptop and I used it for SPHE and SESE by showing pictures of things.*
- INT Did you get any comments, negative or positive from you supervisor or the class teacher during that practice on your use of ICT?*
- N No. During my observation week as a classroom assistant I helped the children individually typing up their essays and poems but I definitely had no comment good or bad from my supervisor.*

Noreen, Paragraphs 64-66,

Yes. November of last year I did a digital video camera course and its use in the classroom, that was in the Education Centre, here in the city. It was for four nights over a month and back in April I did another four session course on using the digital camera in the classroom. They were very useful. The Education centre sends out a list of autumn and spring courses. The Principal was trying to get me into an ICT networking course for four weeks as well but she got in and I didn't. She knows the set up better than I do really. On the strength of my doing the digital video course we bought a digital video camera for the school I used it to record the children during world book day dressed in costumes and the sixth class teacher uses it as well. We also used it to record the skipping programme and we use the tape to show the children this year the various skipping moves. I find the ordinary digital camera more useful. The problem with the video course is that he was using an iPod camera and computer whereas we use PCs and Microsoft software.

Noreen, Paragraph 15,

It is, but it is a lot more hectic, you can do all your planning but you can be taken in a very different direction by the kids, we are running half past eight to ten past two, but I don't leave here at ten past two, I'm here until half four on average, time goes so quickly here in the evenings and suddenly you're back in again the next day, the school itself is very busy.

Noreen, Paragraph 33,

You are supposed to take them out a lot more but I feel confined, maybe it's because it is a city school, you can't take them very far from the school without parental consent we used to go up the woods from school years ago in an organized trip without any parental involvement, insurance is a big thing you have to keep an eye on and it's also a safety issue, always trying to remember, will I get in trouble if I do this, sometimes I feel this issue confines me as you have to run everything by the parents first.

Noreen, Paragraph 19,

The demand is coming from the curriculum and they [the children] are entitled to it, the children know what their rights are, they know they are entitled to 45 mins to an hour of PE a week.

Noreen, Paragraphs 35-37,

I like discussion and debates in the classroom, we are covering oral language well in our class even if it's not down as oral language, I like group work, but you need to have loads of preparation done for group work for things to run smoothly otherwise the noise level just goes up and up. I'm happy when they are working away but I'm not happy when they are turning around all the time. I tried having the desks in groups but they like having the desks in straight rows facing up.

Comments from Lucy

Lucy, Paragraphs 4-10,

Well I suppose growing up I loved it [teaching] a lot. I was always teaching dolls and teddies at home. When I left secondary school I didn't have the points [final secondary school exam results] to go to Mary I [Teacher Education College in Limerick]. I did an interview for Montessori teaching but instead I got an accountancy course so I decided to be an accountant though my first love was teaching. I was doing a lot of drama and helping out a teacher friend of mine with drama, I was disappointed I didn't get into Mary I as I didn't have the points and Irish. [A student in teaching must have an honours grade in Irish in the Leaving Certificate Exam]. So I did the tax exams and hated them and came out. I asked in a few places if my accountancy exams would help me with my teaching application but they wouldn't. The only way I could teach was to repeat the Irish language programme in the Leaving Certificate exam, so I did that in the Tutorial [private secondary school] and got it, did the interview in Mary I and got on the mature B.Ed programme [for students over 23 years of age]

Lucy, Paragraphs 12-14,

A pre-school teacher, now working for the Health Board, working with children, she would have been a role model for me growing up. As well as that I had an awful teacher in my primary school and I always said that I would never ever want to be that. The teacher split the class in half, teaching the good side and getting the bad side to practise their writing and I knew at the age of 11 that this was the wrong thing to do so I wanted to teach and not do that.

Lucy, Paragraph 44,

Well my father was a typewriter mechanic and we had typewriters at home all the time, playing with the buttons and pressing them. When I was growing up he got the electric ones and I was playing away on them, then we got the new ones with the memory on them

and he hadn't a clue, so he was selling these electric ones and he would ask me to go with him, I was 11 or 12, and I would show the ladies how to use the machines

Lucy, Paragraphs 149-151,

Yes, but it wasn't really commented on. I think they didn't fully understand the value of using ICT in the junior classes. I did my practice in this school for my two weeks senior and five weeks home TP. I had access to the computers during my practice. I think they trusted me as I also taught drama here on a part-time basis while I was in College. This experience in the school also helped me in getting a full-time position in the school.

Lucy, Paragraphs 113-115,

I thought it was great. I think everybody should have a laptop going in to MIC. At the end of the day I couldn't manage Teaching Practice without my laptop. It should be extended. Everybody should be made do it.

Lucy, Paragraphs 30-33,

Yes, children know a lot more coming into school, some of them have gone to Montessori school, they know a lot, they are much more independent, they are well able to talk up in class, they have travelled the world, they are brilliant.

Lucy, Paragraphs 36-38,

It depends on how long the teacher has been teaching, they might revert back to the old ways a little bit of chalk and talk, a lot of the younger teachers coming out are all looking for exciting ways of doing things, not all of them, people that really wanted to be teachers, people that really want to teach and want the children to know something. We have to find out new ways of doing things.

Comments from Denise

Denise, Paragraph 13

I had a teacher in my junior classes and then I had her again in fifth class, even though it was a 12 teacher school, the way it worked out she kept us on, she was my favourite teacher, we always did loads of art and craft and she made it very interesting, she did lots of projects and entered the class in many competitions that other teachers wouldn't bother. We planted trees, did many nature walks. I remember at six or seven walking around the roads looking at interesting things.

Denise, Paragraphs 46-49,

At home and secondary school. As the PC got old we updated and got the internet. I was always just messing around at home on the computer. We did some computer classes in secondary school, just typing. We had only one computer in my 6th class and after confirmation and final exams we did work on LOGO writing down all the directions on

the blackboard and then putting in the directions into the computer. We worked in pairs and were all competing to go as we never did it before. Looking back at that exercise as a teacher I can see the value in doing that work with the class as it was really maths we were doing.

Denise, Paragraphs 121-128,

The class I was in for my final practice did not have a computer, it was senior infants, so I used it for creating my own flash cards, schemes and charts but not in the day to day teaching. I used it as a management tool and I'm still the same. All my own work in preparation and presentation I use my laptop. It is making life much easier for me in preparation, I don't spend hours with markers and chart paper getting things ready. I use the www to get pictures for lessons and I use the www at home. I can use it here in the school but I find it easier to use it at home with my laptop. No, some of them didn't want the lessons typed in case you were copying and pasting some sections of the lesson. No they never mentioned ICT during the practice at all.

Denise, Paragraphs 107-110,

I loved it, working with Front Page Editor setting up the web site. We are now trying to set up a site here in the school, the Principal came to me because he knew I could make one but we have a little difficulty in getting permission from parents to use photos and all that, so it was Orla will you help, but we have a number of changes in the school so the web site has taken a back seat for a while but it is back on the agenda again now that we have our new principal.

Denise, Paragraphs 102-104

We should have spent some time working with children in a real classroom setting, this would give you more experience and show us that it is not that easy at the end of the day.

Denise, Paragraphs 73-76

No not ICT but I have taken the ordinary Summer school during the holidays. I did swimming and music twice and I am going to do a science in-service next week and also some drama but no ICT.

Denise, Paragraph 29

Learning through art and craft, through science through doing it. I have a very active class, so when I'm doing time, they make the clock and then learn the time by using this clock. The teaching is very different, the main difference is doing and making and experiencing the things we are doing in class.

Denise, Paragraphs 39-42,

A lot of my teaching is practical and activity based compared to my time in school.

Denise, Paragraph 21,

In college you work hard but you thought this was just for teaching practice, when you come out of college you only have what you made for teaching practice so you have to make everything. When I started it was a new teaching post and there were no resources in the classroom. I started with first class and I shared with the other first class teacher. But everything had to be bought.

Denise, Paragraphs 32-37,

They learn by experiencing. Children in this school don't do anything at home. You send the books home and they are lost the following day. The majority of the parents won't do anything at home with them. When we were small our parents helped, I know it was a rural school I was in but these parents won't do anything. But the children are influenced by TV and computers. We know they are looking to be entertained so we are changing our style of teaching to suit them, we seem to be there just to please them.

Denise, Paragraphs 19-23,

However I love teaching, the amount of things you can do with the children and the extra bits you can do. I take them for choir and preparing for communion and confirmation. I take the senior classes for choir and sometimes enter them in local competitions but last year I didn't as I was preparing them for confirmation but I did enter my own class in the choral competition. Teaching is giving me the opportunity to bring my own interests like music into my work

Comments from Vivienne

Vivienne, Paragraphs 6-8,

I suppose my mother always had children around the house at home, she was doing that at home up to when I was doing leaving cert and at that age I just enjoyed spending time with the children, so I suppose that's what put me towards teaching. My father's cousin was the only one of the family in teaching, she was secondary teaching in the city. Teaching was no. 1 on my CAO and then I had Home Economics teaching after that. I did science for my leaving cert, but it was primary teaching, home economics and then science on my CAO list.

Vivienne, Paragraphs 10-24,

INT Had you any role model that influenced you in your choice of career?

Viv I suppose there were people who wouldn't stand out, maybe that's possibly a reason as well, I enjoyed secondary school a lot more than primary school.

INT Why?

Vivienne, Paragraphs 156-158,

Because if I stop I wouldn't go back to it again, so when I did the diploma I said I have no commitments now so I looked into doing a Masters . It's definitely improving me, because when you are an undergraduate you did the theory but when I do theory now I can actually see it in action and its relevance and some things you forget, it's like doing a refresher course, they remind you again and other areas I didn't take in fully while at college.

Vivienne, Paragraphs 37-43,

I think they learn by doing and using a multi-sensory approach I try to develop and use the senses and not having them sitting for too long and have them active, I can see the benefits of pupil teacher interaction and pupil to pupil interaction. I feel that pupil to pupil interaction gets let out a lot, I like doing group work as it's very beneficial but it's hard at times with the multi-class.

Appendix J

Field Work for Research Project Sheffield 2005/2006

Date	Location of School
12.10.05	Co. Limerick
14.10.05	Limerick City
19.10.05	Portlaois
20.10.05	Kilkenny
21.10.05	Galway City
26.10.05	Cork City
09.11.05	Co. Cork
16.11.05	Cork City
14.12.05	Roscommon
15.12.05	Co. Cork
20.12.05	Kildare
23.02.06	Kildare
25.02.06	Dublin