EXAMINING THE ROLE
OF THE ICT COORDINATOR IN PROVIDING
TECHNICAL AND PEDAGOGICAL SUPPORT IN
IRISH POST-PRIMARY SCHOOLS

By

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Supervisor

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DECLARATION

I hereby declare that this is my own work and that it has not been submitted for the award of any degree at any other university.

Signed: Adrian McDonagh

Date: April 5th, 2011
Examining the Role of the ICT Coordinator in Providing Technical and Pedagogical Support in Irish Post-Primary Schools.

Adrian McDonagh

Abstract

Since computers were first introduced into the Irish Education system in 1977 many millions have been spent on this technology. However despite spending large amounts of money, little empirical evidence exists to show that ICT has improved how teachers teach or how students learn. A key figure in attempting to integrate ICT into the Education system is the ICT coordinator. This research offers a full investigation into the role of ICT Coordinators in Irish post-primary schools.

The research method employed in this study is sequential mixed method which begins with a questionnaire aimed at a large audience. The invited audience was any ICT coordinator working in post-primary schools within a 45 mile radius of Limerick city. After analyzing the data quantitatively a sample of those who participated in the first section of the study were invited to participate in semi-structured interviews to further probe the findings from section 1 and also engage in more open ended questions better suited to interviews. This formed the qualitative section of this study.

The research findings show that many of the barriers that have existed and been reported in the literature in the past regarding a teachers reluctance to integrate ICT into the classroom have largely faded. This is due in no small measure to continued investment in the infrastructure in schools among other factors. In acknowledgement of this achievement, no small measure of praise in helping to overcome those barriers can be attributed to the role the ICT coordinator played and continues to play within the school system. Although the findings show that the role is largely unappreciated and certainly undervalued, in meeting these coordinators they displayed enormous levels of belief and dedication to their role.

The findings from this study indicate that with the infrastructure almost completely in place, now is the time for CPD for both teachers and coordinators. The lack of centralization in the area of ICT that has been noted by researchers in the past and has allowed ICT to develop on an ad hoc basis, may prove key to successful integration, but only if the vision, policy documentation and the potential surrounding ICT can be provided by government.
Acknowledgements

The Author would like to thank Dr Oliver McGarr my supervisor for his enthusiasm, support, advice and banter.

Thank you to all the ICT coordinators who participated, although incredibly busy they took time out to not only participate but they were always so generous with their time.

To all my colleagues in the Department of Education and Professional Studies whose support, words of wisdom and guidance have always been welcome over the past two years.

Dedications

This work is dedicated to my family. To my parents who have always been supportive. Special dedication must go to my wife Nicole, my two beautiful daughters Tara and Aoife and my fabulous son James for their support and encouragement which has always meant so much to me.
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<td>BECTa</td>
<td>British Educational Communications and Technology Agency</td>
</tr>
<tr>
<td>CPD</td>
<td>Continued Professional Development</td>
</tr>
<tr>
<td>DES</td>
<td>Department of Education and Science</td>
</tr>
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<td>EC</td>
<td>European Commission</td>
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<tr>
<td>ICT</td>
<td>Information Communication Technology</td>
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<td>IT</td>
<td>Information Technology</td>
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<tr>
<td>NCATE</td>
<td>National Council for the Accreditation of Teacher Education</td>
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<tr>
<td>NCCA</td>
<td>National Council for Curriculum and Assessment</td>
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<tr>
<td>NCES</td>
<td>National Center for Education Studies (US)</td>
</tr>
<tr>
<td>NCES</td>
<td>National Center for Education Statistics (US)</td>
</tr>
<tr>
<td>NCTE</td>
<td>National Centre for Technology in Education</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>PC</td>
<td>Personal Computer</td>
</tr>
<tr>
<td>ROM</td>
<td>Read Only Memory</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
</tr>
<tr>
<td>U. S. DOE</td>
<td>United States Department of Education</td>
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<td>VEC</td>
<td>Vocational Education Committee</td>
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Chapter 1

1.0 Introduction

Computers first entered the Irish education system in 1977 with the advent of the microcomputer. Over the years the number of computers and related Information Communication Technology (ICT) equipment has grown enormously within the Irish schools system. Not only have the number of systems grown, but the specifications and the processing ability of the computers within the schools has improved exponentially since they were first introduced. With all the advancements and improvements in technology over the last number of years key questions need to be asked, for example, has the introduction of ICT into the Education system actually changed and improved not only the way teachers teach, but the way students learn? Has ICT enabled teachers to change their pedagogical beliefs, or is ICT simply a new media replacing the old “chalk and talk”? Levin and Wadmany (2005) argue that despite the changes in society as a result of ICT, it is not widely integrated into the educational system and, where it is present there is no evidence that it has affected teaching approaches.

Over the years there has been significant investment nationally in ICT equipment for schools through government led initiatives such as Schools IT2000. IT2000, as it is commonly known, was the first significant policy document released by the Irish government that focused on the inclusion and integration of ICT in the teaching and learning process in Irish schools (NCTE, 1997). However Gleeson et al (2001), stated that ICT integration had been adopted as ‘pet projects’ by the various ministers over the previous 15 years. A decade later, and despite the significant investment and profile of the Schools IT2000 initiative, there remained a focus on ICT skills subjects within schools (O'Doherty et al, 2000). This negativity however did little to
dampen the Irish government’s commitment and continued spending at attempting to integrate ICT into schools. This was clearly shown recently when in November 2009 a new €150million plan was announced by the Minister of Education and Skills, the plan outlined that all post-primary school classrooms would be provided with a laptop and that all classrooms will be fitted with a ceiling mounted projector (DES Smart Schools, 2009). This, the Minister believed would help enable Ireland to become a SMART economy, would improve the teaching standards in classrooms, and hence improve the students’ grades and skills. However previous research by Reilly (1999) has shown that simply providing the infrastructure does not guarantee success. Cuban’s (1997) observation supports this sentiment, “It’s not a problem of resources, but a struggle over core values”. This in its most basic form is explaining that without looking at the underlying reasons why ICT is not being used effectively in the classroom, putting a laptop and projector in there, will not change a teachers practice. If however full and proper integration of ICT in the classroom is achieved, some researchers believe that these new technologies are capable of changing the teacher’s role from information giver to facilitator, counsellor, advisor, guide, coach, co-learner, mentor, resource and technology managers, and mediator to the students (Jonassen et al., 1999).

This literature review will fully investigate the role of the teacher and factors that affect their use of ICT in the classroom. Mooij and Smeets (2001) stated that teachers are the most critical "key person" in the implementation of ICT in the school. One area of teacher development considered a significant barrier to the integration of ICT in schools is continued professional development (Tong & Trinidad, 2005). Importantly any CPD should not be specific to learning about computers, but rather learning with computers, because courses which lack pedagogical aspects are likely to be unsuccessful (Veen, 1993). Anderson and Dexter (2000) found that teachers need to know exactly how ICT is used as a teaching and learning tool. In agreement with this Baylor and Ritchie (2002) found that professional development has a significant influence on how well ICT is embraced in the
classroom. Also they added that teachers’ training programmes often focus more on basic literacy skills and less on the integrated use of ICT in teaching.

So how can we best ensure that teachers are given every opportunity and help to integrate ICT effectively into the classroom? As Dias and Atkinson (2001) advise now that computer technology is more prevalent in classrooms, it is becoming less of a decision of whether or not to adopt, and more of a dilemma of how to implement it effectively into instruction. The person within the school system, who is largely responsible for attempting to integrate ICT into the classroom, is the ICT coordinator. The ICT coordinator can be described as the implementer of Government and school IT initiatives. Encompassed within the role of ICT coordinator will be, deciding on the specification of the IT equipment required within the school, purchasing the equipment, and overseeing its introduction and implementation within the school. The role of the ICT coordinator is seen as pivotal if the school is going to successfully integrate ICT into the classroom. According to Reilly (1999) the role of the ICT coordinator within a school can vary from electronic janitor, to pedagogical champion.

Initially within schools the ICT coordinator was the person that was identified in the school and the person who was “handy with these things” or the person who showed an “interest in these things” as Marcovitz (1998, 2000) referred to it as the ‘nuts and bolts’ activities. However Marcovitz (1998, 2000) also claims that these are technical tasks that require the skills that teachers and administrative staff do not possess. So looking at the role a question to be asked is has the role evolved and changed much over the last number of years? Research suggests that in practice the technical role still dominates (British Educational Communications and Technology Agency (BECTA), 2002; Vanderlinde et al., 2009). Also in today’s schools the role of ICT coordinator carries with it huge expectations, some would say unrealistic expectations (Kennewell & Selwood, 1997). In the majority of schools the
coordinator is expected to maintain all the schools IT equipment, or to at the very least liaise with the outside technical support company contracted by the school to maintain the IT equipment. The coordinator may also be expected to provide training in the effective use of ICT to other teachers within the school. Where and when exactly this metamorphosis occurred from only providing technical support to now include pedagogical support is difficult to say. It may be that it naturally evolved over time, as more and more teachers began using IT in the classroom, if they had a problem, they would contact the ICT coordinator, and so the role evolved. However the role of the ICT coordinator will vary greatly from school to school, this problem has been created by the Government; McGarr (2008) found that three successive studies throughout the mid-1990s revealed that in the absence of a national policy, computer use had evolved in schools to become largely confined to informatics classes. Others have described the integration of ICT as “patchy” (Galligan, Buchanan, & Muller 1999).

This research will primarily focus on the role of the ICT Coordinator in post-primary education; however it would be impossible to look at this role in isolation. The role is inextricably linked with national ICT policies, or lack thereof, it is also closely linked with local school policies, including the teachers and teachers’ attitudes to integrating ICT into their teaching. Also other issues to be considered when examining the role of the ICT coordinator are the schools infrastructural setup and the Principals’ views on how ICT can be used to enhance teaching learning within the school. Also an important ingredient when looking at the role the ICT coordinator plays in integrating technology into the school is his or her personal entrepreneurship.

So where does all this leave the ICT coordinator in our schools, the person whom the other teachers will rely on to drive the introduction of new innovations, look to for advice, encouragement, technical support and pedagogical leadership? In truth it leaves them in a no-win situation. With
such importance attached to a role, one might imagine it to be a sought after role within a school, a role with envious status attached to it, an appreciated role. However in line with all the other cutbacks schools are currently facing due to the tough economic climate, there are inevitable cutbacks in funding to schools for posts, and with a recruitment moratorium in place in schools, when a post is vacated it is not filled again. So not alone have the responsibilities of the ICT coordinator increased; any time or payment they may be receiving for carrying out the role may be reduced or gone completely. In light of all of this information and due in no small measure to the level of importance attached to the role of the ICT coordinator to facilitate not only the hardware element of ICT, but also to provide the inspiration so that other teachers integrate ICT into their teaching that this study aims to provide a full and current analysis of the role of the ICT coordinator in providing technical and pedagogical support in Irish secondary schools.

1.1 Research Methodology

The participants for this research study were ICT coordinators in Post-primary schools. Participating schools were chosen by location, this meant that any secondary schools located within 45 miles of Limerick City were invited to participate. A total of 44 schools from Limerick, Clare and Tipperary were located within this geographical area. The Research method was a mixed method approach. The initial part was a quantitative questionnaire containing 27 questions. This was followed up with exploratory qualitative interviews with 9 of the participating ICT coordinators. This follow up allowed for further probing of issues that came to light after an analysis of the quantitative data. The questionnaires were circulated over a 4 week period; participation was voluntary and could be withdrawn at any time. All data collected was treated confidentially and anonymously.
The initial questionnaire focused on trying to get an overall picture of the ICT infrastructure and attitudes towards ICT within the participating school. It also aimed to collect as much data as possible regarding the main aspects of the role and the main challenges of the role of the ICT coordinator. This data was collected directly from the coordinator in the school, so represented a very detailed picture of what the role encompassed.

From the analysis of this data a list of guiding questions were designed for the follow-up interviews. The coordinators who were invited to be interviewed represented a mix of the full sample that participated in the questionnaire part of the study. Interviewed coordinators were from a mix of, all-girls, all-boys, Coeducation, VEC and private voluntary secondary schools from a wide geographic area.

1.2 Thesis Structure

Chapter 2 of the thesis reviews the literature available nationally and internationally. For the purpose of clarity this chapter is divided into three sections. The first of these sections examines the broad attempts to integrate ICT into the classroom. The second section of this chapter will review examples from the literature that examine where and why it has not been successful to date. The third and final section of this chapter will examine ICT coordinator and the technical support aspects of the coordinator’s role, tracking the historical evolution of the role to the present day. Also this section of Chapter 2 will explore the pedagogical support that the ICT coordinator provides within the school. The reason for the extensive review of all literature associated with ICT in Education is that an examination of the role of coordinators’ in isolation would not adequately provide a full picture of the difficulties faced by coordinators’ in their attempts to integration ICT into the classroom.
This review of the literature created the basis for the initial structure of the quantitative part of this study and informed the design of the research tools used.

Chapter 3 describes the research methodology and explains why a mixed method approach was employed in the research. It describes in detail the advantages of such an approach over a single method approach. The chapter also describes the research instruments used including the difficulties experienced by the researcher in compiling the research instruments and collecting the research data. It will also include an outline, including a history of the study.

Chapter 4 will present the findings of the case study. This chapter will be divided into two sections presenting first the statistical findings from the quantitative study. This will be followed by presenting the detailed data collected from the qualitative part of the research.

Chapter 5 will contain an in-depth discussion and analysis of the data presented in the previous chapter.

Chapter 6 presents the conclusions and recommendations resulting from this study.
Chapter 2

Literature Review

2.0 Introduction

This literature review will explore the area of ICT in post-primary Education. The literature review will cover all areas associated with IT in Education, beginning with a look at some of the rhetoric that has been published regarding the possible benefits of integrating ICT into Education. This literature review will also look at examples of where and why IT integration has not been deemed to be a success. The key area of interest in this piece of research is looking at the role of the ICT coordinator within post-primary schools. Although the ICT coordinator is the key focus for this piece of research, the role cannot be examined in isolation. To fully understand the challenges that an ICT coordinator can face within the school system it is important that we fully examine all aspects and attempts both nationally and internationally reported in the literature to integrate ICT into education. To date in Ireland little research currently exists that examines in detail what role the IT coordinator can play in helping to successfully integrate IT into the secondary school system.

An overarching reason for looking more closely at the area of ICT in Education, is that although to date our government has spent almost €200 million (DES, 2009) since 1998 introducing ICT into our education system, little evidence exists to show any real improvement in the education of our second level students (McGarr, 2008; Levin and Wadmany, 2005). Some researchers argue that regardless of the money spent by governments on IT in our schools; providing the infrastructure is no guarantee of success (Sherry et al., 2000). This literature review will also look at attempts
internationally to integrate IT into the Education system and will draw parallels with the Irish education system.

This literature review will begin by first clearly defining what ICT or IT is and it will then introduce some of the rationale behind why schools are trying to introduce it into the education system. This is a key question, why governments, school boards, principals and teachers are so intent on using ICT to improve teaching and learning. In the second section of the literature review we will develop the evidence that examines attempts to integrate ICT into the classroom and present what the literature at both national and international level report as possible barriers to integration. The final section of the literature review will then look specifically at the role of the ICT coordinator. In this section we will review literature that not only looks at what the role should encompass but also at the demands associated with the role. We will also examine where the work of the coordinator is viewed as being successful and where it is deemed to be failing. The section will also examine what factors have influenced the evolution of the role of the ICT coordinator from electronic janitor to pedagogical champion.

This chapter will conclude with a summary section. This summary will be represented with a list that will highlight the findings from the literature review in a succinct and clear way. This section will also contain a summary of what was taken from this review of the literature that helped to guide this study.
2.1 ICT and Education – A Clear Definition and Examining the Rationale behind its integration

Before beginning an analysis of the literature it is important that we first define what the term ICT (Information Communication Technology) or IT (Information Technology) actually means. Throughout this piece of research the term ICT or IT will continuously reoccur. According to the National Council for Curriculum and Assessment (NCCA), the term ICT is used to cover a range of tools and equipment. They go on to say that ICT includes the hardware and software devices and programs that allow people to access, retrieve, store, organise, manipulate, and present information by electronic means (such as personal computers, image editing software, database and spreadsheet programs). It also includes the communications equipment through which people seek and access information (including the internet, video conferencing, and the range of assistive technologies) (NCCA, 2004).

2.1.1 Government and ICT policy

With a clear definition of what ICT is, why then are governments so determined to introduce it into the education system? Over the years there has been extensive research and publications that look at the reasons for integrating ICT into Education. Some of the drivers behind attempts to integrate ICT into the classroom have come from governments, some from society and also from views expressed that ICT knowledge is essential for economic growth (Department of Education and Science, 1997). This report from the DES also stated that Ireland lags significantly behind its European partners in the integration of information and communication technologies (ICTs) into first and second level education.
“The need to integrate technology into teaching and learning right across the curriculum is a major national challenge that must be met in the interests of Ireland’s future economic well being”. (DES, 1997, p.1)

Since its inception ICT has featured heavily in the media and has been a headline grabber. According to Glesson et al. (2001) ICT has been a pet project of various Ministers. Staying in Ireland and the possible impact ICT can have on teaching and learning and further explaining perhaps the government’s persistence regarding the introduction of ICT into education, a report entitled “Investing Effectively in ICT in Schools 2008-2013”, presented to the then Minister of Education, Mary Hanafin, a strategy group set up by the Minister reported in its executive summary that,

“Learning is changing. A pivotal force in bringing about this change is the use of information and communications technology (ICT) which provides richer, more immediate, world-relevant educational resources and opportunities. When used well, ICT enriches learning and enhances teaching. It invigorates classroom activities and is a powerful motivational tool that encourages learners to progress in more personalised and self-directed ways.”(p. I)

The Irish government is not alone in its beliefs regarding the positive effects ICT can have on the education system. In the UK the British Educational Communications and Technology Agency, BECTA (2009) claim that ICT is both a medium and a powerful tool in supporting inclusive practice. It provides wide-ranging support for communication, assisting many learners to engage with learning, including those who are hard to reach, and helps to break down some of the barriers that lead to under-achievement and educational exclusion. ICT is also a motivational tool for disaffected learners, enabling them to learn in ways that suit them, and encouraging creativity. For the many learners who cannot be in school, ICT provides a medium through which they can maintain contact with education.
In the USA, published in the book The American Past, former President Bill Clinton used the forum of his acceptance speech for the 1996 presidential nomination to proclaim

“I want to build a bridge to the 21\textsuperscript{st} century in which we expand opportunity through education, where computers are as much a part of the classroom as blackboards.” (2000, p. cxxi)

It seems that when governments speak about Education, ICT seems to take centre stage. So it seems that globally governments backed the integration of ICT into the classroom believing that it would improve teaching and learning.

2.1.2 Teaching and Learning and ICT

So in practice does the computer in the classroom improve teaching and learning? Advocates and observers have noted frequently the uniqueness of the computer, both in supplementing and transforming conventional classroom content and skills (Cuban, 1986, Teachers and Machines, p. 74). Cited in Afshari et al (2009) Volman & Van Eck (2001) say that the use of ICT creates a powerful learning environment and it transforms the learning and teaching process in which students deal with knowledge in an active, self directed and constructive way. So technology has now changed or altered how people access, gather, analyze, present, transmit, and simulate information. Today's technologies provide the tools, applications, and processes that empower individuals of our information society (See, 1994, p. 30). Godfrey (2001) stresses the potential of ICT to present rich learning environments, allowing learners to adopt multiple perspectives on complex phenomena, to foster flexible knowledge construction in complex learning domains, and to cater for individual differences.
2.1.3 Teachers and ICT

A key figure in the introduction of ICT into the classroom is the teacher and any study of current practice likely to change due to the introduction of ICT must consider what effect ICT will have on the teacher. Historically expectations regarding the impact ICT would have on education have been greatly exaggerated. No more so than when asked to describe the classroom of the future Farley, Gray, & Pare (1996) state:

“As you enter the Classroom of the future, you will see and feel an energy and excitement that parallels the world around us. Students have instantaneous access to limitless resources throughout the world. There will be 6 to 12 computers in the room. Aligned desks and chairs have been replaced by conference tables and work areas equipped with laptops and a telephone; books have been replaced by CDROMs and laser disks. The students will be directing their own learning as the teacher facilitates. Many of the activities in which the students are engaged will look very different than those that may have taken place in the classroom we attended in the past”. (Farley, in Farley, Gray & Pare, 1996, p. 20)

At least in their description of the future they had included the presence of a teacher in the classroom. Abbott (2001) in his book, ICT: Changing Education suggests that “within a finite time teachers would largely become unnecessary as the new technology takes over” (p. xii). In the early 1920s and cited by Cuban (1986), a teacher, Mr. Thomas Alva Edison, the inventor agreed with this sentiment, he wrote a poem which describes a future without teachers:

That the radio will supplant the teacher.

Already one may learn languages by means of Victoria records.

The moving picture will visualize what the radio fails to get across.
Teachers will be relegated to the backwoods, with fire horses,

And long-haired women; or, perhaps shown in museums.

Education will become a matter of pressing a button.

Perhaps I can get a position at the switchboard.

The school system as we know it where the teacher is the is holder of the information and the student the receiver of the information is perceived to be under threat by the introduction ICT into the classroom, or as Mr. Edison says in his poem maybe the teacher will become extinct. However Plomp (2009) states that there should be no neglect of ‘old’ knowledge’: what has traditionally been valued as important knowledge and skills, but schools should reflect a good balance between what is traditionally valued and what is considered important in the information society. Cuban (1986) when summarizing a study of technology in education during the past century states:

“This study illustrates that the search for improving classroom productivity through technological innovations has yielded very modest changes in teacher practice without any clear demonstration that instruction is any more effective or productive after the introduction of radio, films, instructional television, or computers”. (p.109).

So it seems the introduction of ICT into the classroom has placed added duties and pressures and possibly a sense of fear on teachers. According to Afshari et al. (2009) every classroom teacher should use learning technologies to enhance student learning in every subject, suggesting that ICT should not just be a subject but used across the curriculum. The use of ICT creates a powerful learning environment and it transforms the learning and teaching process in which students deal with knowledge in an active, self directed and constructive way (Volman & Van Eck, 2001). In the USA a
report to President Clinton on the use of technology in K-12 schools it was found that in order to make effective use of educational technology, teachers will have to master a variety of powerful tools, redesign their lesson plans around technology-enhanced resources, solve the logistical problem of how to teach a class full of students with a smaller number of computers, and take on a complex new role in the technologically transformed classroom. Yet teachers currently receive little technological, pedagogic or administrative support for these fundamental changes, and few colleges of education adequately prepare their graduates to use information technologies in their teaching. As a result, most teachers are left largely on their own as they struggle to integrate technology into their curricula. (President’s Committee of Advisors on Science and Technology, 1997, p.47)

2.1.4 Society and ICT

The increased expectation on teachers and indeed schools as a whole to integrate the use of ICT into their teaching is not just coming from the government. Societal demands have also created a pressure on teachers to use ICT. Technology is now considered by most educators and parents to be an integral part of providing a high-quality education (U. S. DOE, 2003, p. 3). Today in our society when the media are trying to portray a school in a positive light they will invariably show a teacher in a classroom where all the students are sitting at computers. Some analyst’s believe that ICT will change the way teachers teach, that new technologies are changing the teacher’s role from information giver to facilitator, counsellor, advisor, guide, coach, co-learner, mentor, resource and technology managers, and mediator to the students (Jonassen et al. 1999).
Another key factor when considering ICT and education is the possible benefits to the student from this new form of education. Grabe and Grabe (2001) stated that technology should facilitate meaningful learning in the classroom. In fact, innovative use of ICT can facilitate student centred learning (Drent, 2005). Again Grabe and Grabe, (2001) cited in Afshari et al. (2009) claim that the use of learning technologies to enhance their student learning should be in every subject because it can engage the thinking, decision making, problem solving and reasoning behaviours of students. In the UK, ICT is seen as a motivational tool for disaffected learners, enabling them to learn in ways that suit them, and encouraging creativity. For the many learners who cannot be in school, ICT provides a medium through which they can maintain contact with education (BECTA, 2009).

In Ireland ICT according to the NCCA (2004) adds value to the curriculum when it supports students’ active involvement in their own learning. They go on to say that 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. The literature suggests benefits for the student learner as Ertmer (2005) noted ultimately, the goal is to facilitate uses of technology that lead to increased student learning. However Cuban (2001) questions the extent to which computer based technologies actually impact on student learning and therefore the question must be asked whether or not the Irish governments continued spending on ICT and all it encompasses can continue to be justified (Ward & Parr, 2009). Voogt and Pelgrum, (2005) claim that although it is generally assumed that ICT has high potential for improving education, research consistently has had difficulty in providing convincing evidence on the impact of ICT on student performance. As Shakeshaft (1999, p. 4) notes, “just because ICT is present does not mean that students are using it”.

2.1.5 Students and ICT
2.1.6 School Culture and ICT

For ICT to really make a difference within the classroom, the key factor maybe the teacher but a schools culture can also prove important. According to Hodas (1993) the diffusion of technologies may be inhibited by the micro culture of a certain institution or organization. So the literature suggests that ‘school culture’ is an important consideration in terms of ICT integration (Lim, 2002; Tearle, 2003). Although teachers have slowly incorporated ICT in their repertoire, the use of powerful technologies is often limited to sustaining rather than transforming educational practice (Cuban, Kirkpatrick, & Peck, 2001). Olson (2000) argued that ICT often does not fit into the existing teaching culture and may even undermine the teacher’s sense of efficacy. He found that teachers using technology therefore tend to domesticate applications so that they conform to prevalent practices. So it seems that in the past that ICT has done little to change teaching practices. Higgins and Moseley (2001) note that existing approaches to teaching and learning have a powerful inertia and that schools tend to assimilate, rather than accommodate, new approaches to the use of ICT.

2.1.7 Change and ICT

Not everyone agrees that ICT can or is making a difference within the education system. Cuban, Kirkpatrick, and Peck (2001) found that access to equipment and software seldom led to widespread teacher and student use. Most teachers were occasional users or nonusers. When they used computers for classroom work, more often than not their use sustained rather than altered existing patterns of teaching practice. Levin and Wadmany (2005) argue that despite the changes in society as a result of ICT, it is not widely integrated into the educational system and, where it is present; there is no evidence that it has affected teaching approaches. Hayes (2007) observes that although research into the use of ICT in education is into its
third decade, there is still ‘a pressing need to better understand how computer-based technologies are influencing learning opportunities’ (p. 385).

2.1.8 Summary

Overall analysis of the literature regarding the impact ICT has on teaching and learning can be best described as varied or according to Galligan, Buchanan, and Muller (1999) they described it as “patchy”. Having examined the rhetoric from published literature this review will next look at the various factors that present as barriers to the integration of ICT into post-primary education and where present in the literature positive reports of changes ICT has enabled in teaching and learning.
2.2 ICT and Education – An analysis of attempts to integrate ICT into the classroom

2.2 Introduction

This section of the literature review will analyse attempts both internationally and nationally to integrate ICT into teaching and learning within post-primary education. Teaching with information technologies and incorporating them in schools and classrooms is a highly complex challenge (Mills & Tincher, 2003). It is neither value neutral nor universally understood and depends to a large extent on significant issues relating to teacher professional development, ICT competencies and beliefs (Ertmer, 2005; Jamieson-Proctor et al., 2006). According to Volman and Van Eck (2001) the use of information and communication technology (ICT) creates a powerful learning environment and it transforms the learning and teaching process in which students deal with knowledge in an active, self directed and constructive way. This section for clarity will be divided to clearly show what researchers and analysts believe to be the main barriers associated with integrating ICT into the classroom. Ottesen (2006) notes that there seems to be a considerable gap between the intentions expressed in educational policies and its subsequent use within schools. Although research findings over the past 20 years provide some evidence as to the positive effects of the use of information and communications technology (ICT) on students' learning (Mumtaz, 2000), it still appears that technological innovations appear to leave education systems largely unchanged (Mann, 2000).

An analysis of the literature suggest that the key factors that affect the successful integration of ICT into the school system are the school teacher, the school principal, a schools culture, the schools ICT vision and plan, the lack of a national policy from government, and the failure of initial teacher education programs to equip the student teacher with the necessary skills. A noticeable absentee from the list is the role the student plays in integrating
ICT into the classroom. The reality is that possibly the single largest beneficiary of successful integration of ICT into the classroom is the student and it seems little is written on the topic. One might assume that the goal is to facilitate uses of technology that lead to increased student learning. This sentiment is echoed by Peterson (1984)

“Educational computing, like the Force, is with us. Micro-computers are proliferating in our schools and unless a lot of people are wrong they’re here to stay. But the £64 question is whether these computers will make any difference in the education of our children. When my daughter graduates from high school in the year 2000, will she have received a better education with the help of computers than I did without them?” (Dale, pp.304-305)

Mooij and Smeets (2001) stated that teachers are the critical "key person" in the implementation of ICT in the school. As a consequence special attention will be paid in this section looking at what the literature tells us about what influences a teacher’s use of ICT in the classroom. Teachers are considered the single most powerful system influence (Alton-Lee, 2003; Darling-Hammond, 2000; Nye, Konstantopoulos and Hedges, 2004). So not only have teachers a key role to play in implementing and sustaining change within the classroom they also provide the bridge between the school’s plans and the benefits learners gain from those plans. In agreement with this, Cuban (1986, p.37) observed that, “teachers are the gatekeepers of instructional technology.” Ultimately, the decision regarding whether and how to use technology for instruction rests on the shoulders of classroom teachers (Ertmer, 2005). More recently in the Asia-Pacific region Lee (2006) claims that teachers are key forces in tapping ICT-facilitated learning opportunities and bridging the digital divide in education between and within countries in the Asia-Pacific region. It is because teachers are at the center of curriculum change and control the teaching and learning process, the adoption of ICT innovations is dependent on their willingness, and abilities (Mooij & Smeets, 2001).
Based on the volume of literature and research that has been carried out to date on the key role that teachers play in integrating ICT into the classroom this piece of research will further investigate what influences a teacher when it comes to integrating ICT into the classroom under the following sub headings 1. A teacher’s lack of IT Skills, Knowledge and Confidence. 2. Teachers Beliefs and Pedagogies 3. Continued Professional Development and Time. 4. Poor Infrastructure, Lack of Resources and Poor Technical Support and finally 5. The influence of the Teachers Age and Gender

2.2.1 Teachers Confidence, Knowledge and I.T. Skills

Exploring the literature we can see that teachers who have little or no confidence in using computers in their work will try to avoid them altogether (Dawes, 2000; Larner & Timberlake, 1995; Russell & Bradley, 1997) It makes sense that if a teacher is not confident in his or her ability to use the technology in the classroom that they would be less likely to use it. Also according to Hardy (1998) in a review of studies on teacher attitudes it revealed that teacher confidence affects the use of technology more than variables such as access to equipment, administrative support, and time. In agreement with this are the findings from Jamieson-Proctor et al. (2006) which showed the results of an investigation involving 929 Queensland teachers that it strongly supports the BECTA (2003a) finding that teacher confidence is a major factor in determining teachers' and students' engagement with ICT.

The literature further shows us that teachers like to feel comfortable with technology before utilizing the technology (Snoeyink & Ertmer 2002). Hu, Clark, and Ma (2003) agreed with this sentiment with a longitudinal study of technology acceptance in public school teachers in Hong Kong. They concluded that teacher’s computer self-efficacy (i.e., the individual’s judgment in assessing their own ability to use computers) affected their willingness to adopt new technologies. So the literature points to a strong
linear correlation between teacher confidence and ICT use. Pelgrum (2001) stated that the success of educational innovations depends largely on skill and knowledge of teachers. Similarly, Knezek and Christensen (2002) found that teachers' competence with computer technology will have an influence on the effective use of computer. So teachers should have adequate training programs to improve their knowledge and skill.

The fact that a teacher's confidence or comfort level with ICT will influence if and how they use it in the classroom is again endorsed by Saye's finding that for both students and teachers, comfort with uncertainty strongly relates to the ability to use technology innovatively (1997). In the United States a study showed that

“As schools continue to acquire more and better hardware and software, the benefit to students increasingly will depend on the skill with which some three million teachers are able to use these new tools” (President's Panel on Educational Technology, 1997, p. 47).

A further study three years later again in the United States by, Knezek and Christensen (2000) hypothesized that high levels of (attitude), skill and knowledge (proficiency), and tools (level of access) would produce higher levels of technology integration that will reflect on student achievements positively. This was further echoed by Pelgrum (2001) when he found again that the success of educational innovations depends largely on the skills and knowledge of teachers. In the same study he found that this lack of knowledge and skill was the second most inhibiting obstacle to the use of computers in schools.

The literature also finds that without a good level of knowledge and skill that a teacher can feel nervous or even fearful of using ICT in the classroom, and that this fear can lead to increased stress levels for a teacher. BECTA (2004) found that many teachers who do not consider themselves to be well skilled
in using ICT did feel anxious about using it in front of a class of children who perhaps know more than they do. Larner and Timberlake (1995) found that teachers were worried about showing their pupils that they did not know how to use the equipment. There does seem to be a considerable amount of fear that restricts a teacher from using ICT in the classroom. Some researchers’ share the belief that the teacher harbours fears regarding loosing control of the classroom. According to Cox, Preston and Cox (1999) for the majority of teacher’s the first priority is to maintain order in the classroom and to have a controlled learning environment. Any suggestion of adopting very innovative teaching techniques such as using ICT is therefore seen as threatening this orderly pattern and therefore not desirable. There is a genuine fear amongst many teachers about ICT and scepticism of its value to their pupils. Fabry and Higgs (1997) also suggest that teachers’ fear of computers stems from a fear of losing their professional status, as they see the increasing use of computers in teaching as removing, or downgrading, their traditional pedagogical skills. According to Lee (2006) reporting from the Asia-Pacific region she advises that well-trained teachers using ICT are not available in sufficient quantity. This is partly because many teachers regard technology as a threat to their authority as the main source of knowledge. In addition, pupils are often superior to their teachers in computer skills, further undermining the traditional authority of teachers.

2.2.2 Teachers Pedagogies and Beliefs

In today’s education society there is an assumption among many educators that the meaning of term pedagogy is ubiquitous. However I will begin this section by firstly clearly defining what the term actually means. While pedagogy is a contested concept, it covers a wider range of aspects of the teaching act than simple instruction. Pedagogy is derived from the Greek word paidagogos meaning, the teacher of children, and the intentional use of the term pedagogy, instead of instruction or teaching, in modern times, can be conceptual, geographical and, or ideological. The term pedagogy was relatively uncommon a decade ago but is currently being used more
frequently in publications and teachers' discourse. The advantage of using the term pedagogy, rather than instruction, is that it represents a fresh, broader way of thinking about the learning-teaching act, because in the English-speaking world the term hasn’t received widespread acknowledgment or usage. According to MacNeill, Cavanagh, and Silcox, (2005) pedagogy concerns enabling the learning and intellectual growth of students in contrast to instruction that treats students as the object of curriculum implementation.

The introduction of ICT into the education system has without doubt the potential to change the dynamics within the classroom. Some researchers believe that new ICTs will have a profound impact on the roles of teachers in an information-intensive society (Lee, 2006). It would seem that the new technologies are changing the teacher’s role from information giver to facilitator, counsellor, advisor, guide, coach, co-learner, mentor, resource and technology managers, and mediator to the students (Jonassen et al., 1999). As two American authors (Fabry & Higgs, 1997) put it:

“To integrate technology into classroom practice in the manner envisioned by ardent proponents, teachers must make two radical changes- not only must they learn how to use technology, but they must also fundamentally change how they teach.” (p. 386)

While the foundations for successful technology integration finally appear to be in place (U.S. DOE, 2003) high-level technology use is still surprisingly low (Barron et al., 2003; Newman, 2002; Zhao et al., 2002), suggesting that additional barriers, specifically related to teachers’ pedagogical beliefs, may be at work. Although little has been written about how teachers' beliefs about technology are formed, there is little reason to think they follow a path different from that described for other beliefs (Ertmer, 2005)

According to Zhao and Cziko (2001) many teachers use technology, not because it helps them achieve a new goal, but because it allows them to
achieve their current goals more effectively than do their traditional methods. Zhao and Cziko explained that because technology is at a lower level of the belief-goal hierarchy than pedagogical beliefs and teaching approaches or, in Rokeach’s 1968 schema less central to a teacher’s belief system, and because lower-level goals are easier to vary, it is no surprise that many teachers adopt technology without changing their pedagogy. In fact, if teachers feel pressured to change their pedagogy in order to accommodate new technologies, they are more likely to resist adopting technology altogether (Zhao & Cziko).

Several studies conclude that a willingness to use ICT depends heavily not only upon its usability, but also its perceived usefulness (Cox et al., 1999, Lam, 2000, Preston et al., 2000, Yuen & Ma, 2002). Provenzo, Brett and McCloskey (1999) argue that there are a number of questions teachers using technology should ask, these include: How does the computer change the ecology of the classroom and the school? How does it change learning? and also, How does it change instruction? So it seems for teachers to become proficient in the use of ICT in the classroom, they must first be convinced that it will be of benefit. The question remains of benefit to who, is it to themselves as teachers, to the school as a whole, or to the student in the classroom. Yet changing the teacher’s beliefs may still not be enough for some, there are researchers that have described inconsistencies between teachers’ beliefs and their classroom practices (Calderhead, 1996; Ertmer, Gopalakrishnan, & Ross, 2001; Fang, 1996; Kane et al., 2002). Agreeing with this Ertmer et al. (2001) reported that teachers’ visions for, or beliefs about, classroom technology use did not always match their classroom practices.

So can we continue to hope that successful integration can be achieved without first changing a teachers beliefs, it would seem unlikely. To influence the incorporation of information technology in schools calls are for improved insights into teachers’ beliefs regarding the use of ICT in their classrooms
(Czerniak & Lumpe, 1996). As stated by Guskey (1986) and cited in Ertmer (2005) although it is not clear whether beliefs precede or follow practice, what is clear is that we cannot expect to change one without considering the other. Clark and Peterson (1986) warned, “Teachers' belief systems can be ignored only at the innovator’s peril” (p. 291). Thus, if we truly hope to increase a teachers’ use of technology, especially so that it will improve student learning, we must consider how teachers’ current classroom practices are rooted in, and mediated by, existing pedagogical beliefs. As Marcinkiewicz (1993) noted,

“Full integration of computers into the educational system is a distant goal unless there is reconciliation between teachers and computers. So to understand how to achieve integration, we need to study teachers and what makes them use computers” (p. 234).

Cuban’s observation (1997) supports this stating that it’s not a problem of resources, but a struggle over core values. Dawes (2000) however, is critical of the belief that teachers resist change in their professional practices merely as a result of their personal beliefs. She states that the reported attitude of teachers towards ICT tells us more about what equipment the teacher has access to, what training they have had, and what sort of community they are part of, than it does about the willingness of the teacher to use ICT. The suggestion here then, is that the perceived resistance to change as a barrier is actually only a symptom of other barriers to the use of ICT.
2.2.3 Continued Professional Development and Time

Continued Professional Development (CPD), for teachers in the area of ICT has over the last number of years received very mixed reviews. The fact that many current teachers in the school system will have qualified as teachers long before the introduction of ICT in teaching and learning means that without ongoing training and development the idea of integrating ICT into their classroom would be difficult. Baylor and Ritchie (2002) carried out a study looking at factors facilitating teacher skill and morale and found that professional development has a significant influence on how well ICT is embraced in the classroom. Continued Professional Development is especially important for some teachers, for example those who accept the use of computers in the classroom but they do not know what or how to change their pedagogies (Tong & Trinidad, 2005).

Accepting the general view that CPD is important not just in relation to integrating ICT into the classroom but also in relation to all elements of the teacher as a professional, only looking at it in relation to ICT, the question arises, what is the most effective form of CPD. This challenge and sentiment are echoed throughout the literature. The literature shows that inappropriate training styles result in low levels of ICT use by teachers. Courses which lack pedagogical aspects are likely to be unsuccessful (Veen, 1993). So should CPD for teachers in the use of ICT assume no prior knowledge and start at the very beginning. Many researchers believe this and say that introducing teachers to relatively simple uses of technology may be the most feasible way to initiate the adoption process (Ertmer, 2001; Snoeyink & Ertmer, 2001–2002).

Veen (1993) suggests that training should be differentiated according to teachers’ experience and skills in using computers. In this way differing amounts of skills training could be delivered according to individual teachers’
Fullan (1992) suggested that training should not be one-shot workshops, but rather ongoing experiences so that learners can be kept up to date with ever-changing technologies. Some analysts’ belief in subject specific professional development. According to Cohen and Hill (2001) the most effective teacher training experiences are school subject specific practices, immediately relevant for classroom instruction and connected to school policy. An alternative form of CPD as suggested by Zhao and Cziko (2001) is that observing successful others might increase teachers’ perceived need for change as well as assure them that the required changes are not impossible. Robb (2000) suggests that the type of CPD should be decided by the teachers themselves, he states that the most successful professional development models will engage and empower teachers to have a stronger voice in directing their own learning.

With inevitable cutbacks due to the current economic climate that Ireland is experiencing one area that has been hit hard is the area of professional development. Teachers who now wish to avail of professional development will most likely be required to do it outside of their teaching hours. This is not an entirely new barrier. In the past it also seems that providing opportunities for teachers to experience alternative approaches to teaching was not readily accomplished because of difficulties involved in locating suitable models and in releasing teachers from their classrooms (Albion & Ertmer, 2002).

According to Zhao and Frank (2003) although professional development was available that provided information to their participants about new methods and tools, these activities had little effect on teachers’ classroom practices. Rather, change in teacher beliefs regarding the value of computers was more likely to occur when teachers were socialized by their peers to think differently about technology use. This suggests the need to provide ample time for colleagues to interact with and help each other as they explore new technologies, as well as new pedagogies. Historically teachers have claimed that they are given insufficient time by the school to manage and familiarize
themselves with ICT (Robertson et al, 1996). Cuban et al. (2001) provide evidence to support this. In their survey of teachers at two American high schools, it was found that there was not enough time for computers to be incorporated fully into daily teaching. In the same study it was found that this problem did not only apply to those teachers who made little use of ICT; similar complaints were made by teachers who were attempting to make full use of the technology in their lessons, as they were having to work longer hours in order to make their ICT use successful, paying the price in exhaustion for this kind of dedication.

Teachers continually blame this lack of time for not integrating ICT into their classrooms. A report from BECTA (2004) found that teachers are sometimes unable to make full use of technology because they lack the time needed to fully prepare and research materials for lessons, particularly where this involves online or multimedia content. Time is also needed for teachers to become better acquainted with hardware and software (Fabry & Higgs, 1997). This is echoed by research from Manternach-Wigans et al. (1999) who found that teachers are very concerned about the lack of time for technology; they feel that they need more time to learn computer basics, plan how to integrate technology into their lessons, and actually use the technology in the classroom. In Preston et al. (2000), teachers pointed out that a great deal of work is required in preparing accurate ICT materials for use by children with a range of abilities, and complained of the lack of time restricting them from exploring materials for potential use with ICT.

So it seems that providing teachers with continued professional development is in itself not enough, for the professional development to be effective it should be subject specific and preferably in the teachers school and provided by peers. It also seems that given adequate time more teachers would be willing in some cases to try and integrate ICT into their teaching and in other cases better integrate ICT into their teaching. The literature is clear and the results of a study by the National Center for Education Studies (2000) in the
United States revealed that with in-service teachers 82% of the participants thought that lack of time release was the most significant factor that prevented them from using computers in their classes as well as prepare materials for use with their classes.

2.2.4 Poor Infrastructure, Lack of Resources and Poor Technical Support

It seems that access to computer resources has often been one of the most important barriers for the integration of technology in both developed and developing countries (Albirini, 2006). This finding is further supported by Knezek and Christensen (2002) who found that teachers’ access to technology tools has a major impact on the quality of computer use by teachers. Along with increased access have come increased opportunities for teachers to gain technology skills. The majority of teachers (85%) now report feeling “somewhat well-prepared” to use technology for classroom instruction (U.S. DOE, 2003) a notable increase since the 2000 report from the National Center for Education Statistics (NCES) in which 53% of teachers reported feeling somewhat prepared. Furthermore, in the 2003 study, only 37% of teachers expressed interest in learning basic computer skills while over 80% expressed interest in learning how to integrate computer technology into curricular areas.

Mumtaz (2000) stated that many scholars proposed that the lack of funds to obtain the necessary hardware and software is one of the reasons teachers do not use technology in their classes. According to Ashfari et al. (2009) in general, teachers who had computers in their classes were more likely to use them in instruction than teachers who did not; more than 50% of teachers who had computers in their schools used them for research and activities related to lesson preparation. A total of 78% of teachers surveyed cited limited access to computers as a barrier to effective use of computers in their
classes. Therefore, efficient and effective use of technology depends on the availability of hardware and software and the equity of access to resources by teachers, students and administrative staff. As most previous studies found, there is a strong relationship between the frequency of computer use and the number of computers available in the classroom (Becker & Ravitz 2001; Norris et al. 2003). Fortunately, access to technological resources and equipment has consistently increased (Bausell, 2008).

Albirini’s findings have substantiated this globally felt barrier that computer access has often been one of the most important obstacles to technology adoption and integration worldwide (Pelgrum, 2001). Some researchers have begun to look beyond the simple infrastructure and look more specifically, at such factors that include a lack of convenient access to computers, inadequate infrastructure and poor planning for the use of technology (Smerdon et al., 2000). However in isolation simply providing the infrastructure is not enough, because also affecting the use of technology in schools is the availability of guidance from specialist mentors and online resources (Sherry et al., 2000). Cited in McGarr (2008) a school principal, writing in the Irish Times, noted;

It is simply inexcusable that schools which should be preparing children for tomorrow’s world have only a basic access to technology ... This sorry state has come about primarily because of a complete lack of policy and a funding strategy by the Department of Education to ensure the development of technology in our schools. There has been no direct investment in software and hardware in schools since 2002 ... This is a lifetime in terms of technology. Although most schools now have broadband, they are now forced to use clapped-out computers, many of which cannot access the information superhighway. (Monaghan, 2006, p. 14)
However as stated previously simply providing the infrastructure is not in itself a magic ticket as some studies continuously indicate that computer access is necessary but not sufficient for establishing technology integration in the classrooms (Ross & Lowther 2003; Smeets 2005). That even with an infrastructure in place it takes several years of effort before teachers start using ICT intensively in preparing and conducting their teaching activities (Feldman, Konold, Coulter, & Conroy, 1999; Hakkarainen et al., 2001).

Another perceived barrier reported in the literature is technical support in schools and how it can affect teachers integrating ICT into the classroom. These studies have highlighted the fact that technical support is a recognised barrier that affects a teachers’ use of technology within schools (Holmes et al, 2000). Prior to this in 1997 The National Council for the Accreditation of Teacher Education (NCATE, 1997) reported the lack of technical support as one of the major barriers that resulted in computers being underutilized in the classroom. BECTA (2004) reports that technical faults associated with ICT equipment are likely to lead to lower levels of use of ICT by teachers. Recurring faults, and the expectation of faults occurring during teaching sessions, are likely to reduce teacher confidence and cause teachers to avoid using the technology in future lessons (Bradley & Russell, 1997).

In a very recent study examining the factors affecting technology integration in Tennessee, Inan & Lowther (2010) report that technical support was important in explaining technology integration. Despite the lack of direct influence on technology integration, technical support has a considerably high influence on all mediating variables, so its effect was indirect in nature. As previous studies have indicated, teachers usually need assistance while integrating technology, should problems arise when installing and using software or handling technical issues (Sandholtz & Reilly 2004). With sufficient technical support, teachers feel more competent and ready to integrate technology (Hernandez-Ramos 2005; Sandholtz & Reilly 2004). Butler and Sellbom (2002) carried out a study on barriers to adopting
technology for teaching and learning and they recommended that schools should work to convince technology staff that reliability is very important, especially concerning technology in classrooms.

So it seems that the literature is very definite that poor technical support is a barrier to successfully integrating ICT into the classroom. The next question is who then should provide technical support? Evans (2002) reports that one school’s answer was to ‘farm it out’; i.e. they would use external support to support the technology and found it to be very effective. A variant on this was used in another school, which had a repair service centre on site. Having technical staff available also allowed them to provide assistance to students in using software applications, when they were not engaged in servicing the technology. Regardless of which model a school employs to provide technical support to its ICT infrastructure there can be no denying that this will cost the school a considerable amount of its annual budget. Furthermore in a report entitled Managing ICT costs in Schools by BECTA (2006) states that no single method of providing technical support (for example through in-house assistance or external provision) was clearly more cost-effective than others in every situation (BECTA, 2006). The area of technical support will be further investigated in the section of this review that examines the role of the ICT coordinator.

2.2.5 Teachers Age and Sex

Examining the literature on whether or not the age of a teacher will influence the level that they integrate ICT into their teaching provide few definitive answers. For example a report by the National Center for Education Statistics (2000) conducted in the USA indicated that teachers with fewer years of experience were more likely to use computers in their classes than teachers with more years of experience. On the other hand, Albirini (2006) found that age was not a significant factor in relation to teachers’ attitudes
towards ICT. In a study by BECTA (2004) carried out in the UK the findings suggest that little evidence was found in the literature to support the view that age affects levels of teachers’ ICT use. Younger teachers are no more likely to make use of ICT in their work than their more experienced colleagues (Bradley & Russell, 1997). According to Cox, Preston and Cox (1999) contrary to some previous research findings that ICT is mostly conducted by newly qualified and younger teachers, they found that since many of the secondary school respondents to their survey held senior positions in their own departments, i.e. as IT/ICT co-ordinator, it is not unexpected that they would have several years’ teaching experience already and therefore be older than the majority of newly qualified teachers. In a further study by Bradley and Russell (1997) it was found that levels of computer competence or anxiety did not vary significantly with respondent age.

The literature also gives examples however that age does in fact influence a teacher’s likelihood whether or not they will integrate ICT into their teaching. Research by Robinson (2003) indicated that age directly affects teachers’ computer proficiency and indirectly effects teachers’ technology use. A further piece of research by, Van Braak et al. (2004) clearly indicated that age can indirectly affect a teacher’s use of computers which is mediated by teacher attitudes toward computers. Further evidence provided by Jamieson-Proctor et al (2006) claimed there was no significant relationship between years of teaching experience and teacher confidence, but experience did impact on the level of ICT use that teachers prefer their students to demonstrate, with teachers who have had least experience preferring their students to use ICT more to both enhance and transform the curriculum. Age was also considered a factor according to the results of a study by Roberts, Hutchinson and Little’s (2003) that showed that the probability that teachers would use ICT in the classroom was limited by the reality that teachers who were educated 20 years ago were trained by people who themselves were trained before the arrival of computers in schools.
Examining the literature regarding whether a teacher's sex had any influence on the level of ICT integration into their teaching does show more clearly that it is a factor. For example in the United Kingdom BECTA (2004) reported that there is some evidence to suggest that teachers' sex has an effect on the degree to which they use ICT, with male teachers making more use of ICT than female teachers, and with female teachers reporting greater levels of computer anxiety than male teachers. These findings show that this level of anxiety may have a significant negative effect on ICT use. This finding is of greater consequence for Primary schools where there are more female teachers than male teachers (European Commission, 2003; Bradley & Russell, 1997.) Further research in this area agrees with these findings that sex directly influences the level of ICT integration into a person's preferred mode of teaching (Shapka & Ferrari, 2003; Volman, van Eck, Heemskerk, & Kuiper, 2005).

According to Jamieson-Proctor et al. (2006) their analysis found that male teachers report significantly higher levels of confidence in using ICT with students for teaching and learning. Also cited in a report published by BECTA (2004) it shows that an EC report (European Commission, 2003), noted that sex is an issue which determines the use of ICT by teachers, stating that 77% of male teachers use a computer off-line, compared with 66% of female teachers, and points out that the gap is wider when looking at the use of the internet; 56% of male teachers compared with 38% of females.

In summary whether or not age is a barrier to a teacher integrating ICT into the classroom the research findings are mixed and largely undecided, but the literature does present strong correlation between a teacher's sex and ICT integration into the classroom.
2.2.6 The Role of School Principal

Moving onto to look at the role of the Principals within schools and how their attitudes affect the level of success ICT will achieve within the school. The literature describes the Principal as a key agent for change as Hargreaves et al. (2001, p. 175) noted, significant school-wide change is impossible without effective school leadership and the

“educational change literature consistently points to school administrators as vital agents for creating the conditions in which school reform can succeed.”

Narrowing this area of change down to looking primarily at ICT in education Otto and Albion (2004) note that the introduction of ICT into schools has made significant demands for change and there is a widely held view that unless the principal teacher takes on board and drives that change very little will happen. The literature widely recognizes the significant role that effective leadership in schools can play (Fullan, 2003; Leithwood, Louis, Anderson, & Wahlstrom, 2004; Macneill, Cavanagh, & Silcox, 2005; Senge, 1990).

According to Yee (2001), successful integration of ICT involves the principal providing all staff with access to ICT and ensuring that it is adequately maintained. The advent of ICT in schools has undoubtedly added a new dimension of pressure to the role of the Principal. As reported by Akbaba-Altun (2004) in research carried out on 17 Turkish principals it was noted that it is inevitable that school principals will have new roles as the use of ICT increases in schools. Furthermore evidence presented by Schiller (2003) argues that without the principal’s support ‘the educational potential of information and communications technology may not be realized’ (p. 171). Further evidence in the literature by Robertson, Grady, Fluck, and Webb (2006) into the issues school leaders considered important in regard to ICT found that role of the principal in acting as an initiator was considered an important function in the process of ICT adoption.
Within the Irish context the role of the Principal as educational leader, and change agent is no different. In a recent study by McGarr and Kearney (2009) they found that Principals are the key pedagogical leaders and, as such, their views and thought processes in relation to information and communications technology (ICT) in particular can have a major bearing on the extent to which new technologies will become embedded in the teaching and learning process. When looking again at the question of why we are trying to integrate ICT into education, if policy makers do not show clear and precise examples of good practice they run the risk of losing support in their attempts to integrate ICT into the school system. An example of this can be seen very clearly in the same report by McGarr and Kearney (2009) which shows an extract from an interview with a principal, who has 90 pupils in her school and a dedicated computer room, she commented in the focus group discussion;

“I'm sure I have spent €15,000 on computers; I would love to have spent it on books I feel I would have had something out of it at this stage. And while I believe in computers as such, and I'm disappointed that this is the way that I am after all these years at this point in time because I think children should be educated to use them properly and to be able to get the best out of them, but we in our school are not skilled enough to manage them” (p.94)

When examining support for principals in their attempts to integrate ICT into the classroom and curriculum McGarr and Kearney (2009) noted that there was a general consensus among these principals that the responsibility for leading the integration of ICT into the curriculum rests on the shoulders of the principal and that assistance for this role from external agencies, particularly from the DES, was inadequate.
2.2.7 Teacher Educators – The 3rd Level Institutions

Researchers also perceive a barrier to integrating ICT into the classroom lies firmly at the door of the teacher educators, the third level institutions that introduce ICT in pre service to the new classroom teacher. There is a suggestion that there has been in the past a lack of opportunity for student teachers to make use of ICT during their initial teacher training, this is turn directly affected their uses of ICT once qualified (Murphy & Greenwood, 1998). Simpson et al. (1999) suggest that a reason for this lack of opportunity is the fact that tutors in the teacher training institutions themselves have little experience of using technology in the curriculum, and are therefore unable to pass on those skills as a result. Cuckle and Clarke (2002) add that another barrier for the student teacher in use of ICT in the classroom is the lack of ICT pedagogical training in teacher training institutions. They found that although the student teachers in their study had good ICT skills in terms of their own personal use, they were unable to transfer these skills to allow them to then use ICT in the classroom.

Barak (2006) joins several other researchers (Buettner, 2006; Ottevanger et al. 2007), in questioning the efficacy of teacher preparation for the successful application of ICTs in school classrooms. Other researchers note that when technology is introduced into teacher education programs, the emphasis is often on teaching about technology instead of teaching with technology (Schaffer & Richardson, 2004); therefore, teachers have difficulty integrating technology into their subject areas (Voogt, Almekinders, van den Akker, & Moonen, 2005). Despite the numerous plans to use technology in schools, however, teachers have received little training in this area in their teacher education programs (Varsidas & McIsaac, 2001). Therefore, teacher training is crucial and teachers must be prepared to use technology if they are to use it in their classes with their students.
So how can institutions who train future teachers in the area of ICT in education better meet the needs of this demanding information age? Some believe that teachers need to be given opportunities to practice using the technology during their teacher training programs so that they can see ways in which technology can be used to augment their classroom activities (Rosenthal, 1999). In 2008 Lin (2008) reported from the United States that math’s teachers-in-training who had incorporated web-based instruction into their ICT training subsequently demonstrate more positive attitudes about ICT-supported teaching, and that these more positive attitudes correlate to higher levels of instructional computer competency. Others, for example Albion (2003) found that pre-service teachers, who interacted with a set of multimedia problem-based scenarios in which practicing teachers discussed possible solutions to technology issues, showed significantly greater increases in their self-efficacy for teaching with computers compared to a control group.

According to Pierson (2005) his research tells us that pre-service teachers must see the technology modeled by university faculty, and they must be offered instruction and practice in integrating technology into their instructional methods (Pope, Hare, & Howard, 2002). There is no doubt that educational institutions have a role to play in providing future teachers with the necessary skills that will enable them to become effective practitioners of ICT in their teaching. Afshari et al. (2009) in their research they report that teacher training programs play an important role to provide the necessary leadership in training pre-service and in-service teachers to deal with the current demands of society and economy. They should model the new pedagogies and tools for learning with the aim of enhancing the teaching and learning process. This is emphasized further and cited in McKenzie et al. (1996) who say that it is imperative that teachers in all training institutions be prepared to use and model the appropriate use of technology if education is to continue to meet the expanding and diverse needs of the next generation (Grabe & Grabe, 1996; Mims & McKenzie, 1996; O'Neil, 1996).
Some analysts although they are in the minority claim that newly qualified teachers are better equipped to integrate ICT into their teaching and learning. This finding is not surprising because teachers who recently graduated from a teacher preparation program would be more technology competent (Jones & Madden 2002; O’Dwyer et al. 2004) and more prepared to integrate technology into classroom instruction (Mims et al. 2006).

2.2.8 School Culture

Another suggested barrier to the integration of ICT into the classroom is the prevailing school culture. According to Hodas (1993) the diffusion of technologies may be inhibited by the micro culture of a certain institution or organization. So the literature suggests that ‘school culture’ is an important consideration in terms of ICT integration (Lim, 2002; Tearle, 2003). So what do we mean when we refer to the school culture, school culture can be defined as the basic assumptions, norms and values, and cultural artifacts that are shared by school members (Maslowski, 2001, p. 8–9). These meanings and perceptions indirectly affect attitudes and behavior in the organization of schools (Devos et al., 2007). Hence, if the technology is not received well by teachers, there must be a mismatch of values between the culture of schools and the technology (Albirini, 2006). Thus, teachers who have positive perceptions about the cultural relevance of computer technology will apply ICT in education (Afshari et al, 2009). According to Cuban et al. (2001) the school as an institution may in itself be resistant to the kinds of change needed for the successful integration of ICT. The cellular organisation of the school, the authors argue, with its strict time schedules and departmental boundaries, considerably reduces the cross-fertilisation of ideas within and between departments.
According to Becker and Riel (1999) teachers’ practices and beliefs are continually shaped by their ongoing experiences as teachers, by the values and opinions expressed by those around them, and by the expectations of influential others, all of which are transmitted through formal and informal norms, rules, and procedures. Putnam and Borko (2000) noted that teachers’ practice is more likely to change as they participate in professional communities that discuss new materials, methods, and strategies, and that support the risk taking and struggle involved in transforming practice. Stigler and Hiebert (1999) noted, teachers tend to replicate the culture and pedagogy of their personal experiences as students. Agreeing with the sentiment that a schools culture can influence the teachers who are working within the school, Ertmer (2005) notes that studies carried out all point to the influence of the school environment on how teachers’ beliefs about technology use might be developed and implemented. Results from the work of Zhao et al. (2002) suggest a similar interpretation they suggest an innovation is less likely to be adopted if it deviates too greatly from the prevailing values, pedagogical beliefs, and practices of the teachers and administrators in the school. So from the literature it appears that teachers belonging to schools engaged in ICT planning are more likely to apply ICT in an innovative way (Kozma, 2003).

2.2.9 Other perceived barriers suggested by the literature

In this final piece we will examine the literature that suggests other factors that affect the integration of ICT into the classroom. Firstly we will look at how a lack of national policy has presented as a barrier to effective integration of ICT. We will also include an analysis of the level of use the equipment is getting within our schools and we will look at how that without clear policies, the introduction of ICT into the classroom will have little or no benefit to both teacher and pupil. We will also briefly examine how in Ireland
without curriculum changes little will change within the classroom experience.

Looking first at the lack of national policy Mulkeen (2002) in his analysis noted that within this policy vacuum the use of the technology in the schools reflected the attitudes and beliefs about ICT within schools. This suggests that reasons why schools integrate ICT into the classroom are largely left for each school to interpret individually. So the lack of a clearly defined national policy has been an ongoing problem in Irish post-primary education since the initial use of computer technology almost 30 years ago (Kelly, 1985; McKenna et al, 1993; Mulkeen, 2002; NCCA, 1993; Rinn, 1983). Although researchers have been noting this absence of national policy as far back as 1983 to date the Irish government has yet to release a clear national policy document.

Moving on now to investigate reports from the literature that show the level of use the ICT equipment is exposed to in the school system. For example, research by Mulkeen (2002) evaluating the use of ICT in Irish schools following the Schools IT2000 initiative found that it had only a minor impact on use within schools. His research found considerable variation in the use of ICT in post-primary schools, which he attributed to the absence of clear guidelines or regulations about how ICT was to be used. Research by Hayes (2007) for example found that teachers were largely incorporating computers into their existing practices. So it seems that despite the proliferation of computers in schools, computers are not used adequately in schools (Cuban, 2001). Most of the teachers use computers for writing term papers, preparing tests and for tutorials as well as drill and practice (Flanagan & Jacobsen, 2003). In a study conducted in Australia Hayes (2005) agrees with this sentiment, she reports that her findings indicate that ICT is largely being integrated in ways that support and supplement existing classroom practices. A study by Ertmer (1999) identified three levels of teachers’ computer use, varying in their relationship to the existing curricula. These involve using ICT
as: (1) a supplement to the curriculum, (2) a reinforcement or enrichment of the curriculum, or (3) a facilitator for an emerging curriculum. The research suggests that for a large part ICT usage would be considered to be low level, such as Word processing. The predominance of low-level uses may be due simply to the fact that low-level uses precede high-level uses, and that not enough time has passed for high-level uses to emerge. Based on developmental models of technology integration proposed by researchers for the Apple Classrooms of Tomorrow (Sandholtz, Ringstaff, & Dwyer, 1997) and others (Becker, 1994; Hooper & Rieber, 1995; Marcinkiewicz, 1993), it takes five to six years for teachers to accumulate enough expertise to use technology in ways advocated by constructivist reform. The assumption then is that increased or prolonged technology use will actually prompt teachers to change their practices toward more constructivist approaches. While this may be true, it has yet to be verified by empirical research (Barron et al., 2003; Newman, 2002). For example, based on the results of their work in two high-tech high schools in California, Cuban, Kirkpatrick, and Peck (2001) noted that

“few fundamental changes in the dominant mode of teacher-centered instruction had occurred even in computer-based classes, teacher-centered instruction was the norm” (p. 825).

Cuban and his colleagues postulated that these results might have been because of the “deeply entrenched structures of the self-contained classroom, departments, time schedules, and teachers’ disciplinary training . . .” (p. 83).
Summary

This section of the literature review has examined the barriers put forward by researchers to explain the low level of integration of ICT into the classroom. Undoubtedly the single largest factor that influences the uptake of ICT in the classroom is the teacher, and we discussed in detail the various barriers that teachers feel inhibit their use of ICT in the classroom. Before leaving this section of the literature review a list of the barriers covered that are reported to impinge a teacher in the use of ICT in their classroom are provided:

1. Teachers Confidence, Knowledge and IT Skills
2. Teachers Pedagogies and Beliefs
3. Pre-Service and Continuing Professional Development
4. Poor Resources and Infrastructural Set up
5. Teachers Personal Attributes – Age/Sex/Career Stage
6. Micro Demands – School Culture/ Principal and Other Staff
7. Macro Demands – Lack of National Policy and Curriculum Assessment

Looking beyond the teacher at issues that have emerged from the literature, the next largest factor is effective leadership from the principal within the school, followed by poor preparation for pre-service teachers and also battling the prevailing school cultures. The literature reports that ICT where it is being integrated is simply supporting existing practice and not changing teacher practice. Fullan (2001) argues that for large-scale change to be effective, it requires a degree of top-down initiative at the beginning, followed by larger attention paid to local conditions. So it seems fair to conclude that ICT integration into the classroom is neither value neutral nor universally understood and depends to a large extent on significant issues relating to teacher professional development, ICT competencies and beliefs (Ertmer, 2005; Jamieson-Proctor et al., 2006). Finally Dias and Atkinson (2001)
advise now that computer technology is more prevalent in classrooms, it is becoming less a decision of whether or not to adopt, and more of a dilemma of how to implement it effectively into instruction.

ICT integration into the classroom as suggested by the literature depends largely on the teachers and the principals self efficacy. However with such importance attached to ICT integration and continued investment in improving ICT infrastructure in schools, then who within the school is given the task of driving this change, this integration of new technologies and revolution of teaching practices? This responsibility lies with the ICT Coordinator. The ICT coordinator is a post of within schools, and is seen to be key factor in assisting the school successfully integrate ICT into the classroom. A full investigation of this important role is the focus for this piece of research.
2.3 ICT and Education – Investigating the Role of the ICT Coordinator

2.3 Introduction

This final section of the literature review presents the findings and analysis presented by the literature in relation to the post of ICT coordinator. Depending on where and when research looking at the coordinator was first published the title associated with the post may vary from IT Coordinator, to Technology Coordinator to ICT Coordinator (Lai et al., 2002; Strudler, 1994) but although different in title the duties associated with the posts remain the same. Dividing this section further for clarity proved difficult because the four main areas under examination are transitionally linked. The first of the four areas to be examined are the origins of the role and the rationale behind creating the post within schools. The second sub section will look at the role of the ICT coordinator; from early research publications which examined the diverse demands of the role, this sub section however will look in particular at the area associated with providing technical support within the school. The third area to be examined will look at the leadership and pedagogical champion element included within the role. This section will also report on professional development opportunities for ICT Coordinators. The fourth and final section will be a brief summary of findings from this section.

The literature published surrounding the role of the ICT Coordinator describes it as one that requires a large diversified set of skills (Marcovitz, 1998). The literature also suggests that this role is critically important if a school is going to successfully integrate ICT into the classroom, that this person will be a facilitator or a change agent (Watson, 2006). It is because of the level of importance that the literature attaches to the role of the ICT
Coordinator within the school that this researcher felt that a full and current investigation of the reality of role was warranted.

2.3.1 Examining the Origins and the Rationale for creating the Post of ICT Coordinator

The origin of the post of the ICT Coordinator within schools is directly linked with the introduction of computers into the school systems. This may sound quite simplistic but previous attempts to integrate technological innovations such as radio and television into the classroom to help support teaching and learning were attempted without such a post being created. So why create this post when trying to integrate ICT into the class. In a study by Loucks and Zacchei (1983) which discussed support for innovations in schools stated that a successful innovation requires a local facilitator, acting as

“... cheerleader, building commitment early and maintaining it through constant encouragement; a linker, bringing in outside expertise and ideas and linking resources and expertise within the district; and trouble-shooter, helping teachers solve problems and maximize their efforts” (p. 29).

Also according to Loucks and Zacchei (1983) the computer coordinator assumes this role. It is interesting that in describing the role there appears to be more of an emphasis on coordination and little focus on the maintenance required for the computers.

In a study looking at the importance of the ICT Coordinator in the school, the National Center for Educational Statistics (2000) reported that about 68% of the teachers surveyed believed that lack of support regarding ways of using
technology in the class hindered technology use. The survey also found that teachers in schools with no technical coordinator were more likely to cite lack of technical support as a barrier to their use of technology than teachers in schools with a technical coordinator. This sentiment is echoed by Zhao and Cziko (2001) they claim that if teachers are going to actually change their practice, they will need access to others who can both challenge and support them as they implement these new ideas in their classrooms. In an attempt to meet this need to have an in house expert in the school the role of ICT coordinator was created. A study by Lai and Pratt (2004) claims that it is clear that the ICT-coordination is in a good position to guide and successfully integrate ICT in schools.

So the literature supports the long held beliefs that the ICT coordinator plays an important role in the integration and management of ICT in schools (Lai et al., 2002; Marcovitz, 2000). It seems that with a good understanding of what is required, an ICT coordinator can help change schools in positive ways (Marcovitz, 2000). So in this respect, Strudler (1994) concludes that ICT cannot facilitate learning and instruction without the support of an ICT coordinator as a change agent. We will now look at research that examines and suggests what the roles of the ICT Coordinator should be with a particular emphasis on the area of technical support.

2.3.2 The ICT Coordinator – Definitions and Evolutionary Demands of the Role

This section will examine how the perceived role of the coordinator has changed over the years. This section will mainly report what the literature suggests is the key role of the ICT Coordinator, to provide technical support, but it is inevitable that when a piece of research provides us with a description of what the role should encompass that there will be some overlap of the technical and pedagogical sections of this chapter. So as far
back as 1998 early research suggests that the ICT coordinator is seen to be responsible for training teachers, providing technical support, organizing the school’s instructional computing program, and supporting and energizing teachers (Strudler & Gall, 1998). Two years later a similar description is offered by Moursund (1985) he states that to perform the role of the computer coordinator there were a variety of skills necessary including: general dedication to education and good managerial skills; specific knowledge of the educational system, including good teaching skills and an understanding of educational change; communication skills, with an emphasis on being a good listener; and technical knowledge in computer science and computer education, including knowledge of teaching and learning theory as they relate to the computer field. While nuts-and-bolts knowledge is hinted at in several of the areas, Moursund's emphasis is on educational and managerial skills. Both pieces of research describe a very complex, very diverse and highly skilled role associated with the ICT Coordinator.

H Hancock (1990) defines the role of the ICT coordinator from a different perspective. The author defines the ICT coordinator as a mentor for students, as a role model for the teachers, and as a strategic person who supports the administrative staff and the board. A very noticeable absence in Hancock’s description of the role of the ICT coordinator is technical support. A follow- up study by Strudler (1994) from the initial Strudler and Gall study in 1988 showed school-based technology coordinators, as change agents, that could support teachers to overcome various obstacles encountered when using technology in their teaching. Strudler (1994) suggests that without the support that the technology coordinators provide it is unlikely that technology would have an impact on teaching and learning. Similar conclusions were noted by Becker (1994) who found that exemplary computer-using teachers in the US were more likely to be found in schools with adequate professional development and computer coordination. So the area of technical support that the ICT coordinator provides did not appear to dominate the literature up to 1994. A clear and obvious reason for this
 omission could simply be that the numbers of computers in the school were so low that technical support did not present as much of an issue.

Further studies conducted by Marcovitz (1998, 2000) he reported that the ICT coordinator has three roles. He claims the most important of these is the provision of ‘support by walking around’ and thus being available to respond to the immediate needs of the teachers. The second role includes the ‘nuts and bolts’ activities. These are technical tasks that require the skills teachers and administrative staff do not possess. In addition, the ICT coordinator repairs equipment and orders and installs the software and the hardware. He/she also develops the curriculum and gives training sessions. The development of the curriculum involves planning lessons in collaboration with the teachers and providing decent ICT equipment. The third role described by Marcovitz is ‘policy maker’. This role comprises discussions about the planning of ICT use at the school level.

“The ICT coordinator as a policy maker has the opportunity to make significant differences in the way the school uses ICT to enhance the learning environment” (Marcovitz, 1998, p. 1041).

In outlining the role of the coordinator Marcovitz states that the coordinator should undertake technical tasks that require the skills that teachers and administrators do not possess. However in most schools the role of ICT coordinator is filled by one of the teaching staff (Lucock & Underwood, 2001).

It seems that from the year 2000 on as the proliferation of computers in schools increased because of continued investment in ICT in Education that the work of the ICT coordinator evolved into a more dominant technical support role. A study exploring an ICT initiative in British schools by Somekh et al. (2001) found that the ICT coordinators in many of the schools were responsible for a number of areas, including professional development, students’ skill levels, the development of infrastructure, and the use of ICT to
support teaching and learning. They noted that coordinating the use of ICT to support teaching and learning was usually the area that received little attention when they were needed to provide technical support. This finding suggests that if an ICT coordinator was not required to carry out the technical element of the role that they could spend there time better supporting teaching and learning. This finding is of course based on the fact that the ICT Coordinator is adequately skilled to provide this form of support. In 2002 research in the UK by BECTA revealed the most predominant roles assumed by the ICT coordinator include technical support and supporting children during the learning process (British Educational Communications and Technology Agency, 2002).

In 2007 it seems that more and more was being expected from the ICT coordinator. As Tondeur, van Keer, van Braak, and Valcke (2007) state that the second most reported barrier (29.6%) in their study focused on the lack of adequate skilled staff to coordinate and support the adoption of ICT. As principals mainly perceive their role as a facilitator, they especially expect ICT coordinators to support direct the integration process. Interestingly, in that study many principals reported that it would is be advisable to establish a teacher as a ‘change agent’ in order to maintain sustain the innovation when direction if the ICT coordination is no longer available. One of the principals interviewed in the study be Tondeur, van Keer, van Braak, and Valcke (2007) is quoted:

“Last year, our school had an excellent ICT coordinator; now that he’s gone, ICT integration doesn’t receive a lot of attention anymore.”(p.7)

So the responsibility of providing ongoing support is assumed to be provided by the ICT Coordinator (Lawson & Comber, 1999). A very recent study carried out in Chile by Lobos (2008) concluded that the group of coordinators in his study expressed that technical support duties and administration activities are their main responsibilities. He goes on to say that the coordinators spend most of their time and energy servicing equipment, and
spend none of their time assisting in pedagogical issues. The relationship they share with their peers is strictly related to functional or technological aspects. In other words they are there for technical support and not for pedagogical support. This study was looking at the coordinators dilemma of being an electronic janitor or pedagogical leader. Extracted from one of the interviews conducted for the study one coordinator reports the following:

“I sometimes spend my time removing computer viruses, reloading the operational system… that takes a lot of time…cleaning, that takes a lot of time…sometimes you sit there for hours. Most Fridays I have to be there all day, and prepare everything for Monday. I check the computers to see if they are working properly, but from Monday on, I just check the schedules, see that everything is working ok, but…maintenance…basically I spend all my time doing computer maintenance”. (p. 7)

So the literature seems to indicate that largely the role of the ICT coordinator is one of providing technical support. Inevitably maintaining an every growing number of computers in schools must surely bring with it a certain level of pressure and expectation. In a study into the needs of information technology co-ordinators in the UK Kennewell and Selwood (1997) found that many Information technology coordinators felt under great pressure to fulfill a variety of roles, with inadequate time, often no technical support and a lack of understanding of the issues by senior management. Many ITCs were expected to carry out a technical support role, and felt the need for a technician (p. 343). While the response rate to the survey by Kennewell and Selwood was low the findings concur with research by Lai, Trewern and Pratt (2002) into the roles of ICT coordinators in New Zealand schools. Their study found that technical support was a major obstacle, which reduced the effectiveness of the IT coordinator.
The variety of tasks it seems that are associated with the role of ICT coordinator brings with it a certain pressure. Hancock (1990) concludes that this level of the coordinators duties encompassed such a variety of tasks that it should not be expected from a classroom teacher with a full time schedule. The teachers in this study realized the coordinators technical expertise and identified the position as an important one which successfully promotes computer use. This would suggest that the post is well supported within the school however four years earlier in 1986 Electronic Learning's first annual computer coordinator survey (Barbour, 1986) revealed the following regarding the post of ICT coordinator: that job descriptions vary greatly, that only 21% of the respondents actually held the title "computer coordinator"; the other 79% functioned in that role on a de facto basis and also that 80% of school computer coordinators who responded fulfilled their role as an additional responsibility. The survey results indicate that the post at that time was poorly valued with a large percentage functioning in the role purely on a de facto basis.

From the literature a compelling argument could be made that if a school appoints a person to the role of ICT coordinator then the technical aspects associated with role are more than enough to fill the part time hours that person will be given. However today’s ICT coordinators do not just provide support in the school for technical problems, they are also required to be pedagogical champions.

2.3.3 The ICT Coordinator – Professional Development and Pedagogical Champion

Marcovitz (1998) states that while many of the functions of the computer coordinator could be performed by a technician, the computer coordinator as educator and policy-maker has an opportunity to make a significant difference in the way the school uses technology to enhance the learning
environment. Additionally Lai and Pratt (2004) emphasize the need to consider the ICT coordinator as a leader. This implies that the ICT coordinator should be given sufficient time to practice this leadership role. Earlier Strudler (1994) states that this leadership role is necessary to establish a shared vision and to develop a school plan, he states that without which ICT integration would be difficult to achieve. This leadership role according to Lucock and Underwood (2001) is primarily performed by a teacher, who was appointed ICT Coordinator and therefore his/her main responsibility should be to guide ICT teaching and learning in the school. Their suggestion is echoed by Reilly (1999) who maintains that the ICT coordinator should be the curriculum leader and not the ‘electronic janitor’. According to Gulbahar (2007) reaching the desired level in terms of both quantity and quality for teaching, in-service training and integration of technology into curriculum depends on the support services provided by the coordinator. This is echoed by the New Zealand education system which has increasingly recognized that if ICT is to be used to its potential, the focus needs to shift from schools’ infrastructure and teachers’ ability to use ICT (Ministry of Education, 1998) to its use across all curriculum areas to enhance teaching and learning (Ministry of Education, 2002).

So what exactly is a pedagogical leader or champion? From a study conducted again in New Zealand by Stuart, Mills and Remus (2009) looking at what is a pedagogical champion they report that the literature defines a champion as a

“charismatic individual who throws his or her weight behind an innovation, thus overcoming indifference or resistance that the new idea may provoke in an organisation” (Rogers, 2003, p. 414).

Champions are “the individuals who emerge to take creative ideas . . . and bring them to life” and who “actively and enthusiastically promote the innovation, building support, overcoming resistance, and ensuring that the innovation is implemented” (Howell & Higgins, 1990b, p. 40). Confidence,
persistence, energy and risk-taking are also key characteristics of champions (Howell & Higgins, 1990b).

Champions can be distinguished from non-champions because they can communicate a clear vision of the innovation, display enthusiasm for the innovation, demonstrate commitment and involve others in supporting it (Howell & Higgins, 1990b). Champions are also an important part of the innovation process in an organization (Howell & Higgins, 1990b; Rogers, 2003), and are especially important in the implementation of new technology. The weight of expectation associated with a pedagogical leader is immense. These champions or leaders carry with them a huge level of responsibility and pressure. The key in helping an ICT Coordinator become a pedagogical champion then must be continued professional development.

However the reality for most ICT coordinators as reported in a study by Lai and Pratt (2004) is a lack of time allocation to the job of ICT coordinator and ineffective professional development have constrained the ICT coordinators in planning and supporting colleagues. In fact it seems that the literature places more emphasis on the ICT coordinator providing training and professional development than actually receiving any. Moallem et al. 1996 found that although the resource teachers spent around 75% of their time on technical support, teachers in these schools expected their role to be instructional, providing them with instructional support through workshops and demonstrating the application of software. The teachers in this study believed that any training or professional development the ICT coordinator received should be in the field of instructional design so they could follow the analytical, systematic and evaluative approach necessary to help other teachers better integrate technology into their teaching. So these teachers only want the coordinator trained so that they can train them.
2.3.4 Summary

As Strudler, Falba, and Harrington (2001) emphasize, educational change with ICT is a continuous progress and demands ongoing coordination and support. There seems to be no doubt in the literature regarding the level of importance attached to post of ICT Coordinator. However it seems that despite the numerous roles they appear to assume, research suggests that in practice the technical role dominates (BECTA, 2002; Vanderlinde et al., 2009). However the literature also points to the significance of roles other than the role of technician, including the ICT coordinator as a policy maker (Marcovitz, 2000), leader (Lai & Pratt, 2004), and change agent (Strudler, 1994). Not only is the role of the coordinator complex, varied and demanding, so too are the reasons offered by the literature that suggest what has influenced the decision to try and contain so many key elements into one role. On a macro level, these roles have been influenced by societal and economic demands that were reflected in the curriculum as prescribed by educational policies (Vanderlinde, van Braak, & Hermans, 2009). On a micro level, the roles of the ICT coordinators have been influenced by those who work, teach, and learn in schools, depending on the local needs and resources (Strudler & Harrington, 2008). In considering the role of the ICT coordinator the demands on a macro level must create tensions on the micro level. This single issue shows the complexity of the role of the coordinator.

This complexity associated with the role of ICT coordinator is still prevalent in today’s literature. It seems that although little consensus can be discerned from research, policy, or practice on how the role of the ICT coordinator nowadays should be defined (Vanderlinde et al., 2009). This does not stop the researchers from trying to define the many different key elements attached to the role. In a very recent study Devolder, Vanderlinde, vanBraak, and Tonduer (2010) revealed a four main factors that define the role of the ICT coordinator, there is the ICT coordinator as a planner, a budgeter, a
technician, and an educationalist. However the reality of this complex and demanding role in practice is that only a few of the key roles will be fulfilled (Kennewell, Parkinsons, & Tanner, 2000). As a consequence of this reality, it is still unclear which roles are currently being fulfilled by ICT coordinators in practice and this is one of the key research questions that this study aims to answer.

This literature review has highlighted the complex and multilayered process involved in integrating ICT into the classroom. As discussed in this section the role of the ICT coordinator is a key contributing factor and this study aims to analyse all aspects of the role the coordinator plays in today’s schools. In this study we will fully examine all aspects associated with the role, including the demands associated with the role. Although this review has been broad ranging there are key issues related directly to the ICT coordinator that have guided this study:

1. Demands and challenges of the role
2. Factors that impinge on the role
3. The status of the post within the school
4. The ICT infrastructure within the school
5. The level of technical support available to the coordinator
6. ICT usage within the school – how is ICT being used?
7. Teaching background
8. The personal entrepreneurship of the coordinator and how this affects the level of ICT integration within a school
Chapter 3

Methodology

3.1 Introduction

This study examined the role of the ICT coordinator in providing technical and pedagogical support in Irish Post-primary schools. The study aimed to provide a clear understanding of the demands associated with the role and also to provide background information on those within the schools currently performing in the role of ICT coordinator. It was decided the best way to illicit this information was to firstly design a questionnaire to collect quantitative data that examined various aspects of the role, including the daily demands associated with it. After initial analysis of the data gathered from the questionnaire using Statistical Package for Social Sciences (SPSS), this would, along with information from the literature form the basis for the questions to be asked in subsequent follow up interviews.

The interviews would be with a number of ICT coordinators with a view to expanding on the findings from the initial data collected from the questionnaire and delve deeper into the issues that emerged. These interviews allowed for the collection of the qualitative element of this research and this data would be analysed within the software package NVivo using thematic coding. The interviews would also provide the coordinators the opportunity to explore areas of their roles that were of importance to them and would also allow the researcher an opportunity to obtain other information from open ended questions not suitable for a questionnaire.
3.1.2 Aims and Objectives of the Study

The objective of this study is to answer the following key research questions:

1. What is the current role of the ICT coordinator in Irish Post-primary schools?

2. What are the factors that impinge on the role of the ICT coordinator?

3. What is the status of the role of the ICT coordinator within the school?

4. How does the quality of the ICT coordinator influence ICT usage across the curriculum within their school?

5. What are the implications of future ICT usage and initiatives based on current practice?

6. Can the personal entrepreneurship of the ICT coordinator influence how successful ICT integration will be within a school?
3.2 Examining and Explaining Preferred Research Method

All researchers are faced with difficulties when considering, and finally determining, what form of data capture and analysis would best suit the individual study. This study needed to have the capacity to examine the roles of a large number of ICT coordinators in order to determine the common responsibilities and challenges they face. However, the methodology also had to have the capacity to delve deeply into the opinions and beliefs of coordinators. For a researcher, choosing the correct method of analyses is very important, however prior to deciding on how to analyse data the researcher must first consider many issues. In conducting any research it is important to acknowledge the many factors that must be considered. When dealing with any participants in a study this immediately introduces challenges that the researcher must be aware of. One such challenge is reactivity, which is a bias in responses that occur because participants are aware they are being observed. Another, the Hawthorne effect refers to the influence on participants’ performance (usually and improvement) that occurs due to being involved in a study. Kihlstrom (1995) describes participants as sentient creatures, constantly thinking about what is happening to them, evaluating the proceedings, figuring out what they are supposed to do, and planning their responses.

Another important effect is the researcher; researchers are human and carry their own potentially biasing expectations and motivations into the study. Cognisant of this effect the researcher drew on the literature to form the basis of the initial questionnaire and not personal opinions and observations.

The research employed research tools from the two main research paradigms (quantitative and qualitative). Quantitative research design is an excellent way of exploring overall tends and patterns in a large population. The quantitative structure has not changed for centuries, so is standard across many scientific fields and disciplines. Quantitative research allows for data collection from a large sample and can reliably show results are
statistically reliable. That is, quantitative research can reliably determine if one idea, concept, product, package, etc., is better than the alternatives. Quantitative analysis was appropriate for this study because the issues to be explored are known, and the language used in the research is known and familiar to the participants. In this study many of the issues where known to the researcher from the literature and the wording of the questionnaire would be familiar to the participants so for these reasons a quantitative study was deemed appropriate for this study. However data collected quantitatively can lack richness and deep insight and will not have allowed for probing into matters arising. For this reason introducing a qualitative form of data collection and analysis was considered.

Qualitative research allows for open ended questions, also allows for a more exploratory and flexible approach to data collection. The purpose of then of carrying out qualitative interviews is to allow the study to engage in a more in-depth analysis of the initial data collected, and to ask questions not suitable for a questionnaire. In the past qualitative collection methods, including interviews, have shown great potential for exploring new topics, assisting theory building, and providing context for quantitative data (Jackson & Trochim, 2002). However qualitative research and analysis on its own can allow for more researcher bias, and can be more difficult to be exact. For this reason combining both quantitative and qualitative research methods would help balance advantages and disadvantages of both hence provide a strong balance in the study. Combining both types of research is referred to as mixed methods research.

Researchers define mixed methods research to be research or lines of inquiry that integrate one or more qualitative and quantitative techniques for data collection and analysis (Borkan, 2004; Creswell 2003). Rossman and Wilson (1991) summarized some advantages to using a mixed method for data analysis, and describe three broad reasons for linking qualitative and quantitative data: (a) to enable confirmation or corroboration of each other
via triangulation; (b) to elaborate or develop analysis, providing richer detail; and (c) to initiate new lines of thinking through attention to surprises or paradoxes, providing fresh insight. For this study the intention of collecting the qualitative data was to both elaborate and develop fresh insight so that this would provide richer data. In a mixed methods study data can be analysed in a variety of ways. For the purpose of this study sequential analysis was the preferred option. In a sequential design, a first methodology informs the second. Therefore, the analysis of the first portion is completed before beginning the analysis of the second portion. The quantitative portion, the questionnaire, was completed first in the design, the data was collected and analyzed quantitatively first before starting the qualitative portion, the interviews.

By examining published research, Greene, Caracelli, and Graham (1989) inductively identified the following five broad purposes or rationales of mixed methodological studies: (a) triangulation (i.e., seeking convergence and corroboration of results from different methods studying the same phenomenon), (b) complementarily (i.e., seeking elaboration, enhancement, illustration, clarification of the results from one method with results from the other method), (c) development (i.e., using the results from one method to help inform the other method), (d) initiation (i.e., discovering paradoxes and contradictions that lead to a reframing of the research question), and (e) expansion (i.e., seeking to expand the breadth and range of inquiry by using different methods for different inquiry components). They also concluded that: “Our own thinking to date suggests that the notion of mixing paradigms is problematic for designs with triangulation or complementary purposes, acceptable but still problematic for designs with a development or expansion intent, and actively encouraged for designs with initiation intent” (Greene et al., 1989, p.271). This study contained elements of complementary, development and expansion.
The design of the questionnaire incorporated questions that were initially closed ended but did finish with questions that more open ended, the reason for this was to try and build and expand on the data collected. Employing this form of design in the questionnaire did require careful planning. As described by Koch and Rhodes (1979) with the completion of the quantitative items immediately prior to the open-ended questions could produce a sense of “I’ve already covered that,” resulting in an “economy of thought” exercised by the respondent (Koch & Rhodes, 1979). Also at the end of a questionnaire one may expect participants to be more likely to skip the qualitative items due to possible fatigue or boredom (Lasorsa, 2003).

So the survey instrument used in this study that contained both closed-ended and open-ended items is referred to as a “mixed survey instrument.” Mixing quantitative (closed-ended items) and qualitative (open-ended items) data collection approaches within the same method (i.e., in the questionnaire) has also been labelled “intramethod mixing” (Johnson & Turner, 2003). The interview process involved mainly open-ended questions. Open-ended questions are attempts to access elicit qualitative information from the respondent free from the conceptual boundaries that exist in a structured quantitative survey instrument.

In summary mixing qualitative and quantitative research can result in a more comprehensive and therefore stronger study. Besides strengthening the design and interpretation, mixed methods research allows researchers to answer questions otherwise unanswerable using only one approach. However mixed methods are inherently neither more nor less valid than specific approaches to research. As with any research, validity stems more from the appropriateness, thoroughness and effectiveness to which those methods are applied to the study. As always in research validity assumes that what is being studied is in fact being studied and reliability refers to the idea of repeatability.
3.2.1 Ethics

In the course of any research project it is incumbent upon the researcher to ensure that there is no breach of standard ethical code. Prior to approaching schools or coordinators a requirement for the researcher is ethical approval. This requires forms being submitted to the Ethics committee stating intentions regarding collection of the data, who will be participating in the study, where the acquired data will be stored, that anonymity is guaranteed to all participants and of course that participation is voluntary.

Ethics requires that all participants are given clear information regarding the subsequent use of any material collected. Attached with a completed Ethics form were a research information sheet, a copy of the questionnaire, and a consent sheet for both the principal and the ICT coordinator which would be signed and returned with the completed questionnaire, these documents are included in the appendices. The ethics committee attach an individual code to each application, for this study the code assigned when the application was approved was EHSREC09-60.

3.3 The Questionnaire

3.3.1 Designing the Questionnaire

The initial part of this study was a quantitative questionnaire containing a variety of questions. The goal of this questionnaire was to obtain as much information as possible from the coordinators while also consuming as little of their time as possible. This consideration requires a delicate balance so
that the questionnaire contains enough questions that will provide the researcher with enough data to allow a report that contains valid and conclusive findings. However if the questionnaire contains too many questions that will absorb too much time from an already busy coordinator then they will be less likely to participate. It is worth noting that at the same time that the questionnaires were being distributed to participating schools another questionnaire, this time from the National Centre for Technology in Education (NCTE) was also being distributed. The questionnaire from the NCTE was not voluntary and principals and coordinator where required to have it completed and returned electronically on a very specific date. Some coordinators did voice concerns about the terminology used in the questionnaire issued by the NCTE and also complained about how much time completing it had demanded of them.

Consideration was given to the whether the quantitative element of the study should only contain closed ended questions. An increasingly attractive method adopted by change practitioners is to attach open-ended questions to a quantitative standardized survey instrument (Creswell, 2003). Combining closed-ended and open-ended items is a form of mixed methods research that has gained increasing popularity, largely due to its potential to capture the benefits of both quantitative and qualitative data collection and analysis at a relatively low cost to the researcher (Erickson & Kaplan, 2000). After discussion and considerations the researcher decided to add some more open ended questions at the end of the questionnaire. This it was hoped would allow for more input from a still large audience.
3.3.2 Piloting the Questionnaire

The questionnaire was piloted to two qualified teachers, one a Graduate with a BSc in Education and the other with a BTech in Education. It would have been preferable to have piloted the questionnaire with larger numbers; however those that were included in the pilot provided very positive feedback regarding the layout and content of the questionnaire. Both also commented on the ease of usability and commended the researcher on the clear and concise nature of the questionnaire. Minor changes were recommended from both and after consultation these changes were made.

3.3.3 Selection of Participants

At the outset this piece of research had intended to examine the role of the ICT coordinator in Education in Ireland. This would have meant that coordinators from both primary and post-primary sectors would have been invited to participate. However because of the large differences in the teachers roles within both primary and post primary and also because of different constraints expressed by teachers with regard to curriculum assessment as a barrier to integrating ICT, it was decided to only examine the post-primary sector in this study. Also the researcher works within Initial Teacher Education for Post-primary level. The next criterion examined was the geographic location of participating schools. For practical reasons only schools within a 45 miles radius of Limerick City were considered. The main reason for limiting schools from a geographic perspective was, that in an attempt to increase response rates for the questionnaire the researcher dropped the questionnaires to the schools in person as opposed to mailing or emailing them to the schools. However limiting the participating schools geographically, did not limit the diversity of schools included. The schools
involved ranged from small to large, included both urban and rural, all-boys, all-girls and mixed schools, so a full and diverse range of participants were contained within this area.

However before any contact could be made with the ICT coordinator within schools permission was required from the Principal. This entailed the researcher calling every school in the research area seeking to talk with the schools principal. Due to the demanding role of a principal within a school it was only on a rare occasion that contact would be made on a first attempt. For the most part the secretary or receptionist would take the researchers contact details, the reason for the call, and advise that the principal would return contact in due course. When contact with the principal was established the researcher would then begin to advise that the nature of the call was to obtain permission to speak to the schools ICT coordinator. In the course of this conversation the principal would be made aware that participation was completely voluntary, that no judgement would be made in the course of this research as to the level of ICT excellence or otherwise within any participating school. The principal would have been reassured that confidentially is guaranteed and that the role of the ICT coordinator within the school is the important factor being examined and not the school itself.

Of the Principals contacted only one never returned repeated calls, five explained that their schools currently had no ICT coordinator, and that due to cutbacks they felt that was unlikely to change soon. One of the schools who currently had no ICT coordinator had actually invested and installed 100Mbps broadband within the school. On only two occasions did the principal give permission and the ICT coordinator elect not to participate. Of the two non participating coordinators, one of the schools was a very small rural school with very poor infrastructure and the other school, while the other coordinator seemed willing and enthusiastic he simply never completed the questionnaire. So for the large majority of principals they were happy to allow me contact the ICT coordinator, in two cases the principal was the ICT
coordinator. The principals were largely enthused that someone was looking at this area and some requested if possible a copy of the findings.

Within the geographic area specified there were 44 post-primary schools. These schools were a mix of all-girls, all-boys, mixed, VEC, and private. No school within the geographic area was purposefully left out of the study and in fact every effort was made to allow participants as much flexibility as possible. So once permission was given, subsequent phone calls were made to the schools in an attempt to now contact the coordinators directly. Again due to their teaching schedules and of course busy roles as coordinators messages were left for the coordinators to contact the researcher at their convenience. So of the initial 44 schools within the area invited to participate, five had no coordinator, one coordinator chose not to participate and I was unable to establish contact with one principal. This meant that 37 post-primary schools were still involved in the project.

In an attempt to try and ensure that as many coordinators that said they would participate in filling out the questionnaire actually did, the researcher made the decision to hand deliver the questionnaire where possible directly to the coordinator, otherwise to leave it at reception. Along with this and again to try get as many questionnaires filled up and returned, the researcher advised the coordinators that he would call back in two weeks to collect the questionnaire again either directly from the coordinator or from reception. This form of dropping off and collecting was a very time consuming process but not only did it yield results in the number of participants, it also allowed the researcher to meet the coordinators in their schools. This contact with the coordinator allowed the researcher to build on the relationship from the initial phone contact and this the researcher believes encouraged the coordinators, not only to fill out the questionnaire but also to offer any further assistance that the researcher required.
It was the solid basis of these relationships that allowed the researcher the largest possible field of participants when it came to choosing the school coordinators to interview for the next stage of the study. In total 23 of the 37 coordinators contacted were willing to be interviewed at a future date as part of this study. It was decided that ten coordinators would be invited to participate in the interview stage.

3.4 The Interview

In total ten coordinators were invited to participate in the interview stage of the study. Selection of the participants for interview was not completely random. Random sampling means that every individual in the population has an equal chance of being included in the sample. However the researcher for reliability chose a different form of random sampling, referred to as stratified random sampling. Stratified random sampling refers to when the researcher identifies how the overall population is configured and then randomly assigns participants to the subgroups such that the sample values reflect the population subgroup values. This form of sampling allowed the researcher to choose participants that would be representative of all the schools involved. However in choosing schools to participate in interview, factors such as size and a schools apparent excellence in teaching and learning were not considered.

Of the ten invited nine interviews were recorded. The reason that the tenth interview did not take place was that the interviews were scheduled quite late in the school year and coordinators were busy in their teaching roles and in preparing students for exams. Also because of the lateness in term that the interviews were scheduled it was not possible to arrange an alternative coordinator for interview. Although missing interview material from one
coordinator the researcher had more than sufficient material from the data collected to draw valid and reliable conclusions.

The interviews were scheduled to take place in the coordinators schools at a time that suited their timetable. The interviewee was aware that the interview was being recorded for transcription at a later date. Each interviewee was also reminded that their participation was entirely voluntary and that participation could be withdrawn at anytime. The interviews would basically cover four areas, beginning with how they became the schools coordinator and looking at their areas of teaching. The interviewer would then move onto to present some of the findings from the quantitative section of the study and ask the coordinators for their thoughts on these. This allowed the interview to progress in areas that each coordinator felt important within their role. The interview would then go on to look at new areas difficult to examine in a questionnaire around their attitudes and thoughts about the post, such as what in your opinion is innovative use of ICT. The interview would conclude looking at possible collaboration between schools and also examine the coordinators views on whether or not in their view ICT integration within their school is considered to be successful.

So the interviews were semi-structured allowing the researcher confidence that material that was important to study were covered but also the lack of rigidity around how many questions were going to be asked allowed the researcher the freedom to follow any path that the coordinator might be suggesting as important to them in their role. Each interview lasted for approximately 35-40 minutes; this was roughly the duration of one class which allowed the coordinator to do the interview in the course of their normal working day. However in two cases where the coordinator was willing to go beyond this time, the researcher allowed this and although more data was recorded no new groundbreaking themes occurred. This suggests that the researchers' belief that a single class time was enough to obtain through
interview the data required was correct. The full list of questions covered can be seen in Appendix 2.

3.5 Data Analysis

The questionnaire and interviews were designed to examine the following:

1. Teaching background
2. Infrastructure and technical support
3. Personal skill levels
4. Key duties
5. Support from staff and staffs use of ICT

The analysis of the information gathered from the questionnaires, was carried out using SPSS. SPSS is a software package used for statistical analysis. Within SPSS, a database was created where all questions from the questionnaire were entered. From here the response to each question was entered into the appropriate cell within the database. A screen shot showing the database can be seen in Figure 1.
Having entered all the data from the questionnaires, analysis of the data acquired could begin. The level of analysis possible within SPSS can vary from frequency tables to requesting descriptive statistics and graphs. It was analysis of the data collected from the questionnaires that allowed the researcher present initial findings to ICT coordinators when carrying out the qualitative part of the research.

Questions for interviews were designed following initial quantitative analysis to further investigate the role. Analysis of the qualitative data obtained from the interviews was analysed within NVivo. All interviews were fully transcribed by the researcher; this allowed the researcher to get a better feeling of how the interview went and to also offer more reliability and validity. A view of how the data appears with NVivo can be seen in Figure 2.

![Figure 2](image.png)

NVivo is a software package used for analysing qualitative data. Within NVivo for both efficiency and transparency the data will be analysed and coded thematically. Thematic analysis is an approach to dealing with data that involves the creation and application of ‘codes’ to data. ‘Coding’ refers to the creation of categories in relation to data; the grouping together of
different instances of datum under an umbrella term that can enable them to be regarded as 'of the same type'.
Chapter 4

Findings

4.1 Introduction – Section 1 – Quantitative Data

As previously stated this research occurred in two Sections. Section 1, the questionnaire aimed to map out the territory of the area of examination and was aimed at the greatest number of participants. Section 2 was informed from analysis of Section 1 and therefore this chapter will present the findings from Section 1 first. For clarity the findings from Section 1 will be presented under the following sub headings, background information, the role of the ICT coordinator, the status of the role, technical knowledge and skill levels of ICT coordinators, the schools infrastructure and teachers attitudes. There are issues that present in both Section 1 and Section 2 of this study, where this occurs the researcher will only present this when analysing Section 2. The reason for this is that Section 2 followed Section 1, hence the findings from Section 2 were not known to the researcher at the time of analysing Section 1.

4.1.2 Background Information

We will begin our analysis of the questionnaire by examining the background information provided by the participating ICT coordinators. The findings showed that 68% of ICT coordinators who participated in the study were male, shown in Figure 3. The literature had suggested that the sex of teachers had a direct influence on the level of confidence that they would have exhibited in using ICT in the classroom. Although this study is focused on the ICT coordinator it should be noted that excluding one participant in this study all remaining participants were fulltime teachers and the role of the ICT coordinator was an add on post. The findings from this research showed
that the sex of the coordinator had no direct influence on their beliefs that they have the required technical skills and knowledge. The survey findings show that of the 12 female coordinators that participated, 6 felt that they had the necessary skills, 5 felt they did not and one did not answer.

Examine the age of ICT coordinators, shows a significant finding, that over 70% of participants shown in Figure 4 were over the age of forty, not surprising then that the survey also showed that over 70% of coordinators had over 15 years of teaching experience.
In the literature review, research had indicated that age was not a factor that presented as a barrier to integrating ICT into the classroom. This study supports this sentiment, however as shown in this study 70% of participating coordinators were over the age of 40, could this factor limit their level of enthusiasm for integrating ICT if as suggested by Huberman (1988) when he observes that with age comes increased conservatism. Hence is it possible that this factor has affected the level of success seen in the area of ICT integration to date? Another finding from the survey in this area showed that over half of those surveyed had been the schools coordinator for less than five years.

4.1.3 The Role of the ICT Coordinator

In the next section the set of questions focused more on the day to day routines associated with the role of the coordinator. One question that was put to participants was to examine what they felt were the three most important duties they provided as ICT coordinators, the top three responses are shown in Figure 5. Immediately after this question they were then asked to list the three duties that demanded most of their time, the top three responses are shown in Figure 6. The purpose of asking both of these questions was to examine if what the coordinators felt were of high importance in their role were also the areas that demanded most of their time in the role.
Analysis of the respondents showed that 54% felt that maintaining ICT equipment ranked and the most important duty, this percentage was an exact mirror when 54% ranked maintaining ICT equipment as the duty that demanded most of their time. However, where only 3% ranked repairing ICT equipment as a first priority in their duties; 22% ranked this as first priority as a duty that demanded most of their time. Overall 73% ranked either purchasing, maintaining or repairing ICT equipment as a first priority in their
duties with no coordinator ranking the training of staff in the use of ICT as their most important duty. Further reiterating this point it was evident when examining the demands on an ICT coordinators time, training staff in the use of ICT only features as a third priority for 3% of coordinators. This further augments the findings from the literature that the technical role still dominants for IT coordinators.

Analysis of information displayed in Figure 5 and Figure 6 show for the most part that the duties that ICT coordinators rank as the most important in their role as coordinators match those areas that demand most of their time. Further analysis of this finding could show direct factors for this outcome, such as, because coordinators determine what their roles as coordinators will encompass, this is what they will spend most of their time doing. This area around beliefs and roles was intricate and demanded further investigation in Section 2 of this study and results and further analysis will be shown later in this chapter.

The questionnaire also set out to examine the duties that best reflected the work of an IT coordinator. Figure 7 shows graphically that a very high percentage, 92%, show that maintaining ICT equipment reflect their work as coordinators, whereas only 52% agreed that providing teachers with good practice reflect their duties.
In total this question listed nine possible duties that would best reflect the duties of participating ICT coordinators. For three of these duties that included purchasing, maintaining and repairing the percentages returned were in the range from a low of 73% for repairing equipment to a high of 92% for maintaining the equipment. The same list also contained duties such as training staff, helping teachers’ acquire ICT resources and providing teachers with examples of good practice and the percentages for these three duties ranged from a low of 51% that agreed that providing examples of good practice represented their duties to a high of 73% that agreed that helping teachers acquire ICT resources reflected their work.

**Figure 7**
Staying with investigating aspects of the role of the coordinator in schools, the questionnaire asked how often teachers would contact the coordinator for help in using ICT in their teaching. Figure 8 shows the varying responses.

From analysis of Figure 8 we see that in only 3% of cases was the coordinator never contacted by teachers; this represented one coordinator from the 37 that participated, whereas 41% of coordinators were contacted by teachers either every day or more than once daily. This finding illustrates the demands associated with the role and these demands are further examined in Section 2 of this study.

As previously stated in the literature review the coordinator is seen as a key figure in the integration of ICT into the classroom. The coordinator must be seen to encourage other teachers within the school to use ICT in their teaching. This questionnaire asked coordinators if they had introduced initiatives to encourage teachers to use ICT in their teaching and if possible give examples of these initiatives. Nine coordinators signified that they have not introduced any initiatives by leaving the section blank. Of those that have offered initiatives Figure 9 shows a spread of the initiatives offered.
From this chart we can see that providing ICT resources represented the largest proportion of coordinators first choice of initiatives offered. Also from Figure 9 we can see the 24% of coordinators who did not indicate that they had introduced any initiatives. Also the questionnaire allowed three lines for respondents to fill in details of initiatives they have offered and disappointingly only 24% of respondents offered a second initiative they had introduced and only 14% offered a third initiative. From this finding concluding that coordinators are reluctant to introduce initiatives would be invalid and unfair because the reasons for this could be multi faceted and hence this required further analysis and follow up in Section 2 of the study. Also in Section 2 further analysis involving other pedagogical support could be raised.

The final question asked to coordinators was an open ended question that asked, what is the single biggest challenge you face as ICT coordinator? 43% of respondents chose time as the single biggest challenge. Figure 10 shows the complete breakdown of the challenges reported.
4.1.4 Status of the Role

One of the most significant findings from Section 1 of the study that strongly guided interview questions for Section 2 of the study was that in 40% of the schools involved in the survey the post of ICT coordinator was not a post of responsibility, shown in Figure 11.

By indicating that it was not a post of responsibility this would mean that the teacher doing the work of the ICT coordinator would be receiving no additional pay and also not have reduced teaching hours for the post. Considering the demands the literature review noted that are currently associated with the role it is quite surprising that so many do not have hours allocated. Further probing of this finding through the interview process was
essential and also raised other issues surrounding the status of the post on a micro level within schools.

Analysis of the literature suggested a high level of importance attached to the role of ICT coordinator if a school was going to successfully integrate ICT into the school system. One area examined in the literature review was the time allocated to the coordinator to perform their duties. Surprisingly then this survey showed that 68% of coordinators have no hours allocated to them to carry out the role of the ICT coordinator, and excluding the single fulltime coordinator involved in this study only 3 of the 37 participating coordinators had four hours allocated, one had five hours allocated, the full table of time allowances are shown in Figure 12.

![Figure 12](image_url)

This finding along with almost 40% of coordinators carrying out their duties even though the post is not one of responsibility raises serious questions regarding the status of the role and how the post is viewed within the school. This finding required further investigation in Section 2 of the study. This represented a key finding that help guide the researcher to form the interview questions for the next section of this study.
4.1.5 Technical Knowledge, Skills and CPD for ICT Coordinators

From the literature the role of the ICT coordinator is still dominated by the technical aspects associated with the role, as a consequence this survey set out to examine the skill level of each coordinator. This area was examined under the following headings computer networking, computer repair-software, computer repair-hardware, repairing printer problems, maintaining the network and maintaining audio/visual equipment. In each area examined, the participants were given five options ranging from very good to very poor and in each area the findings showed that the largest percentage selected was adequate. Adequate may have been selected by many of the participants because it can be seen as a neutral response. Full analysis of the data collected in this area is shown graphically in Figure 13.

![Figure 13](image)

In Figure 13 we can see that the largest percentage (41%) of participants rate their skills as either poor or very poor in the area of hardware repair and considering the same participants view maintenance as the most important duty this represents a significant finding. The next question directly asked
each coordinator if they felt that they had the necessary skills and knowledge to allow them to perform their role as ICT coordinator. To respond each coordinator was given the option of replying yes or no and while one coordinator left the response blank, those that did choose were divided equally, with 49% believing they had the necessary skills and knowledge. Worryingly that also leaves 49% who also felt that they did not have the necessary skills and knowledge to perform the role.

![Bar chart showing 49% Yes, 49% No, 2% No Response](image)

**Figure 14**

This raises issues in the area of continued professional development and possible opportunities made available to coordinators. In an attempt to further analyse this area of CPD, the coordinators were asked how many ICT courses they had attended and 38% of respondents had attended more than 6 courses. At the other end of the scale 19% had attended zero to two courses. Figure 15 shows the full breakdown.
The coordinators were also asked to rate the content and relevance of the courses they had attended. Figure 16 shows that 62% rated the courses either good or very good however Figure 16 also shows that 11% also rated the courses they had attended as poor.

Analysis shows there is a positive relationship between those coordinators that had attended 6 or more courses and those that felt they had the necessary skills and knowledge to carry out their role. More accurately in total 13 coordinators had completed 6 or more courses, 10 of these, 77% felt
they had the necessary knowledge and skills to carry out their role as ICT coordinator, pointing towards to a positive relationship between CPD and having the necessary skills and knowledge to carry out the role.

4.1.6 Infrastructure and Resources

For analysis participating schools were separated into categories of small, medium and large. A school with less than 400 students was considered small, more than 401 and less than 700 was considered a medium sized school, and over 700 students and the school was classified as a large school. The findings here show that only three schools had over 700 students, the remaining 92% of schools that were within the geographical area were evenly split between small and medium sized schools. Participants were also asked how many computers were currently in their school. Knowing the number of computers and also knowing the number of students in a school allowed a calculation to determine the student to computer ratio in these schools. The best student to computer ratio found was almost 1:1 where a school with 120 students had 100 computers. However the worst ratio reported was 13:1 this school had 400 students and only 30 computers. By adding up all the computers in the participating schools and also the total number of students in the participating schools, the average ratio showed itself to be 7:1 so seven students for each computer. An analysis of these findings along with comparisons from the literature around national averages will follow in the discussions chapter.

In the past teacher confidence regarding the reliability of equipment in schools has been reported in the literature as a barrier to integrating ICT into the classroom. However the findings from this survey show that 73% of coordinators rated the ICT equipment in their schools as either good to very good, with only 6% rating the equipment as being poor to very poor. Figure 17 graphically shows the complete analysis.
This finding suggests that using equipment reliability as a barrier can no longer be considered a valid argument. This study also examined the area of internet access and network connectivity within individual classrooms and the findings show that in over half of the participating schools, more than 15 classrooms within the school had access to the internet and that 46% of participating schools had computers connected to the network in more than 15 classrooms.

The literature has also shown the importance of a school having an ICT plan/policy as a resource to assist ICT integration into the school; this survey showed that 87% of schools did indeed have a written ICT plan/policy, shown in Figure 18.
The literature also suggests that a plan had a greater chance of success if more than just the ICT coordinator was involved in drawing up the document. The findings from this survey show that in 35% of participating schools only one person, the ICT coordinator was involved in drafting the plan/policy. Hence for almost two thirds of participating schools more than just the coordinator was involved in drafting the plan/policy. In 38% of the cases an ICT committee was involved in drafting the plan, and in 48% of schools the schools management were involved in drafting the document. However with such importance attached to the role of the teacher if ICT integration is going to succeed it was disappointing to find that in only 27% of participating schools that a member of the teaching staff was involved in drafting the plan/policy. The full percentages are shown in Figure 19.
The literature has shown that for a school ICT plan/policy to succeed involvement was important, but also the teaching staff’s awareness of its existence and contents were also important. This along with the question of whether or not the plan in the school is taken seriously will be further investigated in Section 2.

4.1.7 Teachers Attitudes

The literature review describes teacher’s attitudes as a potential barrier to integration of ICT into the classroom. However following analysis of this survey it showed that 86% of coordinators described the teaching staff attitude as being either positive or very positive. 14% described the attitude as being neutral, however none of the coordinators surveyed described the teaching staff’s attitude as being in any way negative or very negative. This finding required further analysis to examine how this positive attitude towards integrating ICT into their classroom teaching manifests itself on a daily basis within the school. This finding suggests a change from previously published
literature suggesting that teachers were reluctant to introduce ICT into their classroom has changed. However further investigation was required in Section 2 of the study.

Participating coordinators were also asked, other than maintenance, what ICT issues would a teacher be most likely contact you about. This question was an attempt to explore areas other than maintenance that the teaching staff in schools might contact the coordinator. Analysis of the literature on a national level presented previously in the literature review showed that the coordinators role was evolving from a technical role to a more pedagogical role. However the findings in this study show the role still being dominated by technical issues. In answering this question, 30% of the coordinators replied that they were contacted for help using various software. Figure 20 shows the detailed response.

![Figure 20](image_url)

**Figure 20**

A further 19% contacted the coordinator for advice on purchasing equipment, while 19% were also not contacted about issues that were not regarding
maintenance. None of the respondents suggested being contacted about training or pedagogical support. This finding suggests that the role of the coordinator within the school is viewed as being one of a technician and not pedagogical leader, for validity, further investigation and probing was required. A further analysis of how the role is viewed within the school was necessary and subsequently carried out in Section 2.

This study also examined the likely level of use that ICT equipment in the classroom was receiving, in other words, for the teachers that were using ICT in the class, what were they using it for. The respondents were given a list of seven items and were asked to numerically represent the level of use, with 1 being the most used to 7 being the least used.

The results in Figure 21 show that 32% believed Word Processing represented a teacher’s use of ICT in the classroom. Figure 15 also shows that 30% claimed that ICT was being used for Presentations. Only one
The coordinator indicated that the use of interactive whiteboards represented the most used piece of ICT in the classroom. In fact 16 coordinators representing 43% of respondents indicated that Interactive Whiteboards were the least used ICT item by teachers in the classrooms. These findings will be further discussed in the next chapter when discussing how and where future ICT investment should be directed.

4.1.8 Summary of key finding from Section 1

The 37 ICT coordinators that participated in this survey did so voluntarily and anonymously. The findings as reported represent without prejudice or distortion the contents taken from the questionnaire.

Before beginning an analysis of the interviews which is Section 2 of this study a brief summary of the information taken from the survey that help guide the questions asked during the qualitative portion of the study are presented.

1. The lack of time allocated to the post.

2. 40% of coordinators are actively engaged in the post even though it is not a post of responsibility.

3. How is the post viewed by other teachers in the school and how the post is viewed by the principal?

4. Is the post valued by the staff?

5. Is the work done by the coordinator appreciated?

6. The survey also highlighted that the role of the coordinator is still being dominated by technical matters.
7. The survey showed continued professional development to be an important factor for the participating ICT coordinators in helping to improve their technical skills and knowledge of ICT.

8. The survey also found that teaching staff were largely positive towards the integration of ICT into their classroom.

Section 2 of this study, the interview, will allow for further probing into the key areas highlighted. The area of external support available will also be further investigated and also any training offered by coordinators and what that training might entail. Also in Section 2 questions are asked to show how the teacher’s positive attitudes are manifested daily within the school. The questionnaire lacked the ability to investigate all aspects of the role of the coordinator. Areas surrounding the coordinators pedagogical beliefs, their understanding of innovative use and other aspects of their role could be best investigated during the interview section of this study.
4.2 Introduction - Section 2 – Qualitative Data

The second section of this study involved revisiting nine of the schools that had previously participated in Section 1 of the study. Due to the fact that some of the questionnaires had not been returned and analysed by the time interviews had begun there are some discrepancies between percentages mentioned in the interviews and those exact percentages found from the full analysis of all questionnaires. These percentage differences however are not large and the findings presented to coordinators are still valid, they are all in agreement with the full analysis when all questionnaires were returned, however marginal percentage differences did occur.

These findings will also be presented under sub headings for clarity. The sub headings are guided by the questions that were asked during the interviews with coordinators. Each interview contained areas that aimed to not only further analyse the findings from Section 1 of the study but also each interview being semi structured allowed for new issues if they arose during interview to be explored. The semi structured interview also allowed for key areas to be covered in every interview, areas such as presenting and discussing with the coordinators the findings from Section 1 of the study.

Using thematic analysis each interview was coded using the following steps; each interview was read and interesting points underlined, and then starting again and only reading the underlined items and re-examining the text for similarities between interviewees. Then going back and reading it again and look at the first order themes and see if broader themes are emerging. After completing the coding of the interviews as described above, the data was set aside for a number of weeks to allow for digestion of themes and also to allow a window of time before analysing the data for a second time. On return to the data all interviews were this time analysed using the software
package NVivo, the process used for inputting the interview data into NVivo was each question asked was considered a heading and responses from every coordinator were shown under the same heading. This purpose of using a different form of analysis was to ensure validity surrounding the findings presented in this study.

This section will begin by reporting on the participating coordinators educational career, the goal was to examine if coordinators within schools came from specific subject areas. This section will also report on how the participants became the school’s ICT coordinator? Was the post advertised? Did they attend an interview? This section will then move on to discuss and further probe the findings from Section 1. Coordinators will be asked for their opinion on the researchers findings from the survey. New areas will then be investigated, areas that for richness of data are better collected and analysed qualitatively. These areas include, monitoring ICT use in another teachers class, in their opinion how ICT is improving teaching and learning, there understanding of pedagogical support, and also there understanding of innovative use of ICT. The interviews also covered in a more in-depth manner the issue of technical support, and possible alternative models offered by coordinators. This section will also include an investigation to examine if coordinators collaborate with other schools in the area of ICT and if they can see any benefit to collaboration. Each interview ends with the coordinator being asked if they believe ICT integration has been successful in their school.

4.2.1 Educational Career and becoming the ICT Coordinator

As previously stated each interview began by examining the educational career of the participating ICT coordinator. The objective was to examine if possible links existed between a teacher’s specialist subject area and that teacher becoming the schools ICT coordinator. From the nine interviews conducted no relationship was evident with the subjects taught and
becoming the schools ICT coordinator. The coordinators interviewed were teachers in subject areas from Modern Art to Physics and showed no trajectory from specific subject areas to becoming the schools ICT coordinator.

The interview progressed on to observe how the post of ICT coordinator was filled within the school. Each coordinator was asked the same question, how did you become the schools ICT coordinator. Analysing the responses to this question showed that none of the coordinators interviewed had actually applied or been interviewed for the post of ICT coordinator. This raises questions regarding the status of the post within the school and is further analysed later in this section. The most frequent response to this question was that they just ‘fell into the role’. One coordinator offered the following response

“Because the guy who was here doing it retired and then I took over the computer classes. So I kind of just fell into it because I was the only person who was teaching computers and knew the stuff so I now have been put into it”

Another coordinator offered the following

“Am, the previous IT coordinator, went into another role, and there was a need for somebody else to take up the ICT coordinators role, so I was invited to do that because I had already done so much work in that area. So kind of in a way I grew into the role”

The aim of this study is to examine the role of the coordinator and not to prove or disprove any issues relating to the role. However for those that participated, the findings show no correlation between subjects taught and becoming the schools ICT coordinator and that none of those interviewed had applied for the post directly.
4.2.2 Discussing the Findings from Section 1

Each coordinator interviewed was presented with the findings from Section 1 of this study. The first finding put to them was that half the coordinators surveyed felt that they didn’t have the necessary skills and knowledge to carry out their duties. One coordinator was quite shocked, “no, really, no”. Others felt more than equipped with the necessary skills, “I feel I have the skills, and again probably self taught” another said “Yeah, I have enough skills to do it”. One coordinator suggested that the post should not require you to be a “techie”, the coordinator explained:

“Well it depends on how you see the post I think. I don’t see the post as a technical post. I don’t believe that you need to have technical people on the staff. If you want to have a technical person on the staff you should have a technician. You should have a technician fixing things and you should have coordinators coordinating things”

Each coordinator was also presented with the findings from the survey that showed that in 41% of schools the post of ICT coordinator was not one of responsibility and at the same time they were presented with the findings that over 66% had no hours allocated to the post. Responses to these facts were very mixed. Some interviewees agreed completely with the sentiment, when asked about having no hours one coordinator said “Well I am one of those” another agreed, “I have no hours allocated”, another had been promised hours next year. One coordinator offered that the reason she was doing the job was “Goodwill at the moment like a lot of things in the school”. One coordinator was quite surprised when presented with this finding; the following is an extract from the interview:

Researcher: “That actually brings me on, to 66% of coordinators that I surveyed had no hours allocated to the post and in 40% the post was not a post of responsibility.”

Coordinator2: “Oh be mad, that’s an absolute madness, I mean I don’t know how anybody. Its core, it’s absolutely core in this school. Because I mean in administration, that’s the main, I mean that’s critical data on
that, so that can’t go down, that’s really, you need a coordinator, unless a principal was up to speed and they could handle it. Invariably they wouldn’t, they wouldn’t have a clue about it. I mean the idea of IT not being, am, not being a post of responsibility, I just can't understand that, I can't understand that. There are fools actually, there, in schools doing that for nothing. The amount of time it takes, and the amount of effort it takes”.

Researcher: “I was quite surprised, I mean is it as high as 66%”.

Coordinator2: “They are mad”

The next findings presented to coordinators was the fact that over 80% of those that responded to the survey acknowledged that the teaching staff’s attitude to integrating ICT into their classroom teaching was either positive or very positive. In the interview coordinators were asked how this positive attitude was evident and how it manifested itself on a daily basis. One coordinator agreed that the attitude was positive, “I think it is but it’s slow to come in”. Another said “it is positive yeah” and when asked how it manifests itself he said

“There is just massive interest, there is money we are supposed to be getting for laptops and there is massive interest in that and we have put televisions that act as monitors in a lot of the rooms and people are very positive about that and they really want this overhead projector in the room”.

Another coordinator suggested the following when presented with the same findings,

“Yeah even people with very poor computer skills have become energised by the whole thing they see it as a new way of approaching their teaching and even see it making their lives easier in the long run because it takes the pressure off the chalk and talk”
However the same coordinator thought that the positive attitude might be a manifestation of guilt, when asked how it manifests itself daily he explained,

“Daily I don’t know, but certainly people have expressed a desire to get more training, so that they can actually use it. They all have their laptop now for example, I don’t know is there any little bit of guilt in not using it properly but at the same time it’s obviously a waste if they don’t”

Another coordinator offered a very detailed response,

“Well I suppose while a lot of them have a positive attitude towards it and are open towards integrating ICT into the classroom, a lot of them are unsure how to actually do it. How to integrate it, what's available to them out there to actually go ahead and integrate this and make it a positive learning environment for the kids. I think they are very aware that integrating ICT into the classroom is very, very important; some teachers have gone about doing it. I suppose it’s a lot of the younger generation of teachers have done it as opposed to older generation, (the younger) who would be more au fait with the use of technology you know and I suppose they are the ones who have come and looked for certain information in terms of integrating ICT into their classroom”

Age was also raised as an issue when discussing the teaching staff’s attitude to ICT in general. One coordinator noted that,

“It’s very split, the older staff have no interest in changing over to computers now, whereas the younger staff really see it as the way forward, you know, they really want to use it and everything”

Another finding presented to coordinators in interviews was that over 90% maintained ICT equipment, however far less provided training, the researcher asked the coordinators if they provided training, the nature of the training they provided and if they thought that training should be part of the role. One coordinator firmly did not see it as being part of the role, “no
absolutely not” during the interview with the same coordinator the issue of training arose again this time he said “Show rather than train, train is a bad word, Jesus they could get upset about that”. Other coordinators were content to allow training to occur on an ad hoc basis, where “they would approach me if they wanted to know something” and “any training at the moment I provide to teachers is on a one to one basis if they need it”. Another coordinator said

“Well I’ve provided a small bit of training now, but really, its I suppose as I see it to reduce some of the work load on myself for people coming to me individually”.

Other coordinators had embraced the training of staff in the use of ICT, in one interview the coordinator explained the difficulty in finding suitable time that both the coordinator and a teacher or teachers are free at the same time. Still on the issues of time he said,

“More often than not you are relying on teachers goodwill, where you provide it in their free time and your free time, that the reality of it, that not always satisfactory but that is the constraints of time available”.

The same coordinator also explained that the teaching staff were approached to see what kind of training they felt would be of benefit to them,

“So when I advertised that course I also invited staff to identify areas that they might be specifically be interested in, that they might need to address, which I did, so that was what was rolled out. Now that was a voluntary course, so that was for staff where they wanted to come in. In the past we would have always done basic ICT training where we for example we would run it and the bigger issue was basic ICT skills, so we did an ICT skills analysis and we did some training for staff who needed some basic skills. So that is the kind of training that we have offered”

This positive manner of constructing training around issues and skill levels of the teaching staff was taken a step further in another school. When the issue of training was asked in this interview the coordinator explained that they had
grouped teachers according to the various skill levels and that another member of staff had received a contract to as he put it “to drive this thing”, the same school had also recently installed 100Mbps broadband. He explains,

“because of the work load (as ICT Coordinator) we have actually employed somebody a member of the staff and given him a contract for 3 years to implement that, so he has taken that on board totally, to drive it, you need somebody to drive it. So he is in the process of now of organising training, and he is very professional, knows exactly what he is doing. He got an audit of the different skills different people have and what they want and broken them down into five different categories, from people who are well able to it, down to people who couldn’t even switch on the machine and we are in that process at present. Now I will be delivering some of the courses there, address each of these, to the very specific problems people have or specific desires in terms of IT so as to enable them to deliver classes better in the classroom”

Coordinators were also presented with further data from the survey that showed with teaching staff having a positive attitude and 73% of coordinators rating the ICT equipment in the school as either good or very good, why ICT integration is still viewed by the wider audience to be failing, why it is not being used effectively. Two coordinators disagreed with this sentiment and both claimed that it wasn’t failing, that it was being used. In agreeing with the fact that it is not being successful one coordinator blamed a lack of raw materials as the cause. Another believed that,

“.. the majority of teachers don’t have the expertise and they don’t know how to use it so they don’t bother using it and then if people aren’t using it and they can’t access the resources well then it just does become a failure”

A similar response was offered by another coordinator who believed that proper training must be provided, more specifically,
“Not just once a year or once every six months some system of regular updates all the time keep people motivated”.

One coordinator provided an extensive analysis why in his opinion ICT in the school system was failing; in offering substance to his theory he also provided an example that illustrated the point. The following is extracted from the interview, although the extract is quite long, it does contain a tangible explanation including an example that can offer a detailed description of a potential barrier towards ICT integration:

Coordinator 5: I can because I think you need, you see, I think the infrastructure in our school we are in a very good position I don’t know if that is true for a lot of schools really. I’d say it is better that it was but I’d say it’s still not adequate for what they are being asked to achieve with ICT in Education. That said, looking at our situation we have a good infrastructure there are still impediments to integrating ICT into Education, and the thing that people have to talk about eventually, is the thing that is at the core of the system which is the curriculum assessment and really you have got to start the conversation there, because the key driver is not going to be ICT frameworks which isn’t by the way a curriculum or a syllabus, its and enabling framework but enable you to do what to meet the requirements of the curriculum assessment. So you know you can talk around in circles as long as you want, but what are teachers fundamentally accountable for and accountable for as well, results of examinations, attitudes of parents, expectation of parents, and of their students and that all comes back to curriculum and assessment and I would guess and I know this from experience from my old school trying to evaluate initiatives. If you really get down to it, what is the driver, its curriculum and assessment and how ICT and achievements in ICT recognised in curriculum and assessment, very little? So you know why isn’t it working, what are the drivers, and the key driver, you know, you could flood the school with technology in the morning and some training and you might find that
what you might find is the bigger issue is the cultural shift and the cultural shift isn’t just about teachers attitudes, it’s also about what are their constraints and what are they accountable too and therefore what do they feel they have to do to be successful in their job, and the answer is getting kids results in the examinations and I don’t think that ICT in Education is properly reflected in the curriculum and assessment to a degree that will see very significant integration of ICT in teaching and learning. That’s my short answer to the question.

Researcher: That’s a very valid point. It does come back to exams, assessment at the end of the day.

Coordinator 5: I can illustrate that now because if you take our schools with a good ICT infrastructure and if you look at how teachers are using it, you will still for example at leaving certificate, that what students really want is notes. They want notes, they don’t want to be distracted by perhaps more student orientated, student centred learning or approaches, because there is a culture of notes, and there is a culture of achieving at examination, so it challenging for the teacher to move beyond that culture when it’s still anchored to the exam itself, do you follow me.

Researcher: Very much so, yes.

Coordinator 5: Because I have been using for example technology, specifically Wikis with students at Leaving Cert to get them to work collaboratively and peer to peer assessment and learning. Sometimes they just look at you and say can you not just give us the notes, do you now. So that’s an illustration of the point, because you talk kind of abstractly and say it’s all affected by the curriculum, when it gets down to it the kids just want to get the points in the exam. There is an established route for getting that in the exam and they want to stay on that road because they believe that’s how they are going to succeed. Now maybe it’s not fair to focus on the Leaving Cert and examinations which is a very protected area.
The response given by Coordinator 5 highlights what is for some researchers the elephant in the room. How can ICT be successfully integrated and make a worthwhile difference to teaching and learning while it is just considered an add on. Simply adding a subject in ICT into the leaving certificate syllabus will not in isolation guarantee success, however a shift in the curriculum and culture to reflect the importance placed on ICT would certainly be a step in the right direction. A quote taken from the interview with Coordinator 6 gives an example of this possible shift, “they have three classes of religion a week, and one class of IT, madness”.

The final area presented to the coordinators related to the large percentage of 87% of schools that participated in the study had an ICT plan/policy. During the interview process this issue was raised in an attempt to analyse if the plan was simply a document that nobody other than the coordinator was aware of, a document that perhaps was not taken seriously within the school. All but one of the coordinators interviewed either had a plan in place or were in the process of redrafting a new plan. Seven of the nine coordinators interviewed also believed that the teaching staff were aware of the contents, and that the plan was taken seriously within the school. In all cases the plan was available for staff and some cases the plan had been made available on the schools Virtual Learning Environment (VLE).

In this section we have discussed with coordinators the findings from Section 1 of the study. Although in part the purpose of interviews was to validate the data gathered from a larger sample of coordinators using the questionnaire, the interviews offered the opportunity of further probing the coordinators opinions and beliefs around these findings. Although this subsection contains substantial detail the main areas investigated were, half of those surveyed felt that they didn’t have the necessary skills, responses here varied from shock to feeling skilled, to not believing the post required a ‘techie’ at all. Another area revealed from the findings in Section 1 was that of 66% have no hours and 44% of coordinators are operating without a post of
responsibility, this finding stirred strong emotions, particularly from one coordinator who felt “they are mad” if they are doing the role without receiving payment or reduced teaching hours. All coordinators agreed with teachers having a positive attitude towards integrating ICT, and this will be reviewed in the Discussion chapter. The issue of training showed that in some cases Coordinators didn’t provide it, however where training had been provided, ongoing as opposed to once off training was being recommended and coordinated grouped training to meet the needs of varying levels of skills was also recommended by coordinators. The other key area discussed is with good infrastructure and positive attitude from teaching staff, why is ICT still viewed to be failing, the issue of curriculum drivers and again lack of training shone through as key issues.

4.2.3 Further Examination of the Role of the ICT Coordinator

Under this sub heading data collected from interviews will be presented that relate to a more detailed analysis of the role of the ICT coordinator. Areas such as external technical support, how coordinators view their roles within the school including giving a brief job description, whether coordinators currently observe the use of ICT in other teachers classrooms and finally coordinators will be asked for their views on the pedagogical side of their role.

Analysis of the data collected from questionnaires showed that 54% of coordinators agreed that maintenance consumed most of their time, and that 92% considered maintenance reflected their work as coordinator. However as stated previously coordinators in schools are largely teachers and ICT coordinator is an add-on post, so how do they cope with problems that arise that are outside of their technical expertise. When asked this question all of the coordinators interviewed did have some form of external technical support available to them. The type of support varied from a company calling regularly to perform routine maintenance to a company simply confirming
that a machine was beyond repair. Also all coordinators agreed that cost was 
an issue in utilising external support. Only one school had a maintenance 
contract in place where the company called routinely to ensure computers 
and the network were operational, all other coordinators would simply react 
to breakdowns by calling in external support and in most cases when they 
could not fix it themselves.

The coordinators were also asked if the current model of technical support 
employed within their school was adequate, did it support the schools needs. 
While some coordinators were satisfied with the level of technical support 
currently available within the school, others were not,

“Am, it’s not, we are reviewing that, because our infrastructure is 
growing so we are having to review it, but at the moment it’s debatable.”

Another coordinator when examining IT support explained his dilemma in 
balancing being a teacher and being an ICT coordinator,

“It’s all we can manage to do because I mean I don’t have the technical 
expertise and actually maybe it’s as well that I don’t, because if I did I 
then have to deploy that expertise and if I was doing that all the time, I 
wouldn’t be in class and somebody else would be complaining that I 
wasn’t doing my job and that’s my job, the ICT is a part of a 
responsibility, it’s an add on, it’s not my occupation and you know I 
think we have to be realistic we can’t do everything as teachers”

All coordinators were also asked even those who were content with the 
current level of technical support available, if they could suggest an 
alternative model of technical support. One alternative model was 
continuously offered,

“Yeah, centralised, I would love to see all of the technical support 
centralised. Somebody like the Department of Education set up 
technical support”
Another coordinator who worked in a VEC school offered the following,

“I think that if it’s the VEC or if it’s area education, if its people in Limerick or people in Clare, or wherever it may be, all schools in West Clare or all schools in East Clare, or Primary or Secondary. If you had 10-14 schools and you had one person with 14 schools, employed by somebody, be it the VEC be it somebody else, pay them well, do not pay them monkey money, but pay them properly, for the job that they do and make sure they are good at the job that they do and they go around one school per day and every two weeks then the schools would be serviced properly”

Another coordinator believed that a shared technician employed by the DES was a good idea; however he also had a very realistic view on the issue,

“That would be brilliant but that won’t happen though, that’s more employment, they won’t do it, not at all, that’s pie in the sky”

Throughout this study cost has remained a strong issue, so much so that one coordinator could not see an alternative, “cost wise we couldn’t afford an alternative”.

As previously stated coordinators in the first section of this study ranked maintenance as the most important duty they perform within their role. In this interview stage questions were asked to coordinators to describe their role as if they were going to advertise it in a national newspaper. The reason for such questioning was to gather data that would allow for a better examination of the role. What emerged from talking to coordinators was that no document existed either nationally or within their own school that clearly defined what their role would encompass. This vacuum of policy documentation allowed each school coordinator to define and determine the parameters of the post. Some of the coordinators interviewed joked that if the
duties they currently carry out were advertised within the school that nobody would be qualified to apply.

In an attempt to more conclusively capture the essential aspects of the role each coordinator was asked to give a brief job description. One coordinator offered the following

“Making sure that the 150 machines are working, making sure that proper software on them, all licensed, that’s my role. Present a report to the Board of Management at the end of every year on how thing are going, which way it should go in the future”.

The strong maintenance theme was evident throughout all interviews held; another of the coordinators offered the following,

Coordinator 4: I do everything to do with computers.

Researcher: Absolutely everything to do with computers.

Coordinator 4: Absolutely everything.

Researcher: That’s fair enough, it covers everything.

Coordinator 4: Because it really is, even as far as the toner in the staff room in the photocopier, if the photocopier is not working you are called, because that’s sort of technical so you are supposed to be able to fix it.

One coordinator believed that the role of the coordinator “really is the liaison between the school and the support company”. Another coordinator said his role was to “keep the place running” in the same sentence he said that his role is “not to do with curriculum or content or anything like that, that is left to peoples own imaginations”. One coordinator did however offer the following,

“I will break that down in two ways for you. I will break it down in what’s my role at the moment and what I would like my role, where I would see my role being in a couple of year’s time. My role at the moment has a
lot to do with maintenance, making sure there is internet up and running computers are up and running, printers are ok, data projectors, how to fix problems when they occur, who to go too to fix problems, when teachers want to purchase ICT equipment, that’s my role at the moment. Where I would like my role to be is to have all that set up, now there is still going to be a certain amount of maintenance to be done, but I would like a system in place where everybody knows what’s available, everybody knows how to go and access whatever they need, the resources are readily available to them, which they are not at the moment. From that then I could make more time making sure that teachers get more information on ICT training, and I suppose to help develop their skills in the use of ICT in the classroom, that’s where I would like to get to, I suppose to spend more time in that area. I don’t have time to do that at the moment, I don’t have the allocated time to do it, nor do I have the time outside of it to do because as I say most of my time is taken up with maintenance. I suppose I’d like to see it, see me as being able to help out teachers more in the use of ICT in their classrooms, that’s what I would like to be doing”.

In one participating school the role of the ICT coordinator had evolved from ICT coordinator to E-learning coordinator. Such is the importance of this move from a largely technical role to a pedagogical role that it will be discussed in a sub-heading of its own in this chapter.

The next area examined with coordinators was around pedagogical support, did they offer it, and should it part of their role. The findings from this examination indicate that pedagogical support is not part of the role for most coordinators in schools. One coordinator offered the following,

Researcher: Well that’s another thing around pedagogical support; the title of my thesis is the ICT coordinators role in providing technical and pedagogical support.
Coordinator 6: Yeah, mine is technical only, not pedagogical in any shape or form.

Researcher: One thing that I have found from one or two coordinators is that they wouldn’t feel comfortable.

Coordinator 6: I certainly wouldn’t no. Like I suppose we are like, protective of our little environment, I wouldn’t like it if somebody came in and told me how to do my job, you know.

The same coordinator also offered this insight into the role of the teacher, “It’s a delicate area, you know, teachers are pretty much insular in their own subjects really”. It seems quite obvious that Coordinator 6 would view any form of pedagogical support as interfering and not helping other teachers, this narrow view however was echoed elsewhere by other coordinators. One coordinator didn’t understand the concept of pedagogical support and expressed concern that if they as coordinators were to provide pedagogical support who would look after the maintenance. Another coordinator when asked about pedagogical support laughed, he did however say it would be “nice” if it was part of the role of coordinators but questioned a coordinators ability to navigate through different subject areas. This raises the issue of pedagogical content knowledge, for example how can the ICT coordinator who may for example be a Maths teacher know a good resource for the History teacher when he may know little of the History syllabus. This will be discussed further in the next chapter.

Still on examining the role of coordinators within the school, participants were asked if they currently observe the use of ICT in the classroom, the rationale given by the researcher for presenting such a question was that without ongoing monitoring how can we know if ICT is contributing to teaching and learning. The participants were also asked if observation should form part of the role of the coordinator. It should be noted that within the Irish education system no structure exists for evaluating a teacher’s performance and while
being cognisant of this fact the question regarding ICT use still has merit. The coordinators who were presented with the question largely stuck with the response that such a structure didn’t exist and that teachers wouldn’t welcome being evaluated. The responses did little to answer the question of without ongoing monitoring how can we be sure that ICT is contributing to teaching and learning. When asked if observation should be part of their role responses varied from “absolutely not” to “from a support point of view only” to “if it was a post it should definitely be within it”.

In this subsection the issue of providing schools with a form of centralised technical support was raised by a number of coordinators, with one technician shared among a cluster of schools, the technician would be paid for by the DES. If this form of support was in place coordinators suggested that this would leave them more time to develop a pedagogical support element to their role.

4.2.4 The Role of the E-Learning Coordinator

One of the coordinators that participated in the study had seen the role of ICT coordinator evolve to become the schools E-learning coordinator. When asked about the difference between the role of ICT and E-learning coordinator the following was the response,

“I don’t see the post as a technical post. I don’t believe that you need to have technical people on the staff. If you want to have a technical person on the staff you should have a technician. You should have a technician fixing things and you should have coordinators coordinating things. So I would see myself as an E-learning coordinator. Now what I actually do I, if something is broken in the school I don’t feel that I have to fix it, my role is to liaise with our ICT support and to ensure that they can fix the things in a timely manner. Then my role would lean towards developing an E-learning culture in the school and more to E-learning
and supporting staff and making strategic decisions about E-learning in
the school”.

When the issue around technical support was presented to the E-learning
coordinator and the possible alternative support models being tried by other
schools such as ICT committees the following response was given,

Coordinator 5: I don’t know I’m not at all comfortable with teachers
providing technical support, I don’t see why that should even be in the
mind set, because it a technicians job to provide technical support and
it’s a teacher’s job to teach. And when you are looking at what their
concerns should be, it should be about teaching and learning, using the
technology, it’s not about the technology, whether it works or not, that’s
just one issue, it’s actually really just a fundamental. It’s like, it’s not
about if your car starts or not, it where you want to go with it.

Researcher: True.

Coordinator 5: There the questions teachers should be talking about,
they shouldn’t be talking about nuts and bolts, and RAM and stuff and
what's working and not working. They just shouldn’t be having those
conservations, period like, you know, it just needs to be like water, you
turn on the tap and it works. The bigger challenge is actually the whole
culture shift in terms of teaching and learning, I think the infrastructural
thing is actually a huge distraction, I think it’s a woeful distraction, and
I’m not one to be distracted by that because, although I am constantly
distracted by that, but I see that as a distraction. I also understand it’s
the number one priority in the schools that the thing works.

The following are the views of the E-learning coordinator explaining the role
within the school; is that it should be a “leadership role” “it's about giving
vision” he goes on to say “I don’t think teachers should be fixing things, they
should be using them”. The coordinator also expressed the belief that with
ICT infrastructure growing within schools a pressing need is to now use the
improved infrastructure,
“I just think that the technology is moving towards a type of technology that will be useful in schools and I think that the big carrot then for schools is ok we have this, now how are we going to use it, and who is going to give a bit of leadership in that sense and who is going to facilitate that and in terms of drawing up the role of the E-learning coordinator that is going to be a key part of the role”.

There are obvious and stark differences between views expressed by the now E-learning coordinator and that of other ICT coordinators. These differences in views and beliefs are of such vital importance regarding the evolution of the role that it will be revisited in the Discussion chapter.

4.2.5 The Full Time Technician and ICT Coordinator

One of the coordinators that participated in this section of the study was also employed as the schools IT technician on full time basis. In Section 1 of the study he could easily be identified as the coordinator that has forty hours allocated to the post. Although having a fulltime in house Technician can help with integrating ICT into the school, does having a fulltime technician help integrating ICT into other teachers classrooms? In examining how this role differs from that of other ICT coordinators the interview began by exploring how he had become the schools ICT Coordinator.

**Coordinator 9:** I came in as an IT technician and the ICT coordinator the original one I actually took over their position as coordination of the Network it also involved the IT technical side itself.

**Researcher:** So the post was originally advertised as an IT Technician, so you more or less became the coordinator

**Coordinator 9:** Became the coordinator through, basically took over the role of coordinator because the previous person was a fulltime teacher and because it was a dedicated position, I would actually have
taken over that role of IT coordinator, technician and teaching IT as well.

**Researcher:** And did the previous coordinator, did you talk much too them, how did the find the role before you arrived.

**Coordinator 9:** By all accounts, extremely stressful, it would have been an extremely stressful position and it would have been known throughout the environment, that it was an incredible undertaking for; it was actually a language teacher that had the role and admitted by that teacher that they were glad to see the back of it.

When asked how integrating ICT in the school was progressing he offered,

“One of the difficulties is that you are a one stop shop basically you are the person getting in under the table or planning down the line and trying to look forward with planning and research and also you are working hand in hand with students”.

From the interview it could be clearly seen that the role of the schools IT technician was an extremely busy post, when this area was discussed the coordinator offered,

“I said to you earlier on its human nature to think that your own position is a very stressful post but the hours speak for themselves”

He went onto say,

“I actually really cannot kind of comprehend how anybody that has no hours allocated runs the system. In that system I can actually see a system that runs itself for a certain amount of time but the problems build up and actually you are talking about a system that’s going to go down and not come back up”.

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During the interview the Coordinator offered this assessment of his role within the school,

“One thing I have actually noticed is that sometimes my position is kind of frowned upon because when I make changes sometimes it can take people out of their comfort zones and basically you come across as the baddy with a stick trying to make people or push people into certain areas”.

From the interview it can be seen that although not surprisingly the fulltime technician and ICT coordinator had become the schools answer to all things IT, he describes his role as “fire fighting”. The post is extremely busy, however having a fulltime technician may ensure a more robust infrastructure for the school but how this will lead to improved integration outside of the computer lab is not clear. The fulltime technician can offer technical support but with no teaching qualification he could not offer any form of pedagogical support to the teaching staff within the school. This will be further discussed in the next chapter.

4.2.6 Collaboration between schools on ICT Issues

This section of the study will report on the area that investigates if ICT coordinators have in the past or currently collaborate with any other schools in relation to ICT. The purpose of investigating this area of collaboration is due to a lack of national policy schools have been allowed to develop ICT in an ad hoc fashion, which in its most basic form means that school A and school B will develop completely independent of each other. This form of singular and almost an introvert method of development means that schools without voluntary collaboration can all be making the same mistakes and
where a school has experienced a level of success again no other school will benefit from this.

Of the nine coordinators who were all asked if they currently collaborated with any other schools in relation to ICT issues, not one was actively engaged in productive collaboration, responses varied from “not now, no I used to before” to simply “no”. One of the coordinators did say that he did “do a little with other schools” but that was mainly in his own subject area, not as an ICT coordinator. However when each coordinator was asked if they could any benefit to collaboration with other schools their responses were very positive. One coordinator when asked if he could see any benefit replied, giving a very good example,

“Yeah I think so; because in every school there will be people who are doing things very well and it is interesting to know what it is they are successful at and you might be able to replicate it in your own school, that’s basically it you know”.

Another coordinator who not only saw his school limitations put also possibilities in helping schools not repeat mistakes they had made,

Coordinator 7: “Am, well definitely others would be far more advanced in their thinking then we would, I could see a benefit there”.

Researcher: “And likewise it’s a sharing of information, I think it would be beneficial myself”.

Coordinator 7: “It would, and you make mistakes as well, you might go down the wrong road for a while, that would help somebody else avoid that”

The same coordinator when discussing the same area admitted that schools seldom look outside for solutions, “but again most schools operate in their own little area and are very inward looking really”. This reiterates the fact stated earlier that schools are largely introvert and act independently in their
approach to integrating ICT. However another coordinator who had collaborated in the past found it to be a beneficial experience,

Researcher: Was that (collaboration) helpful.

Coordinator 8: Oh definitely yeah, definitely, huge, huge help, the more ideas you can see, the more information gather, you will always try and, you gather them and I suppose you use them for your own set up, you adapt them for your own set up, to try to improve your own.

Researcher: Do you think it would be useful on an ongoing basis if you were collaborating with 6 or 7 schools.

Coordinator 8: Oh yeah, absolutely, the more shared resources you have, and the more shared ideas you would have the better.

Researcher: Yeah, a good dose of brainstorming could help.

Coordinator 8: Like you might have come across a problem that I mightn’t have and you might have found a solution to it and if the solution is out there and its readily, but I would say that, that information would have to be readily available to teachers, like if that information was out there, the solutions to problems, the access to those would have to be made available, readily available, because if it’s not teachers won’t go to the trouble of going looking for it.

So whilst it seems schools are aware of the possibilities associated with collaboration, none are proactive in pursuing it. Could this be the inward looking approach as suggested by one coordinator or possibly as one coordinator suggested a fear of not measuring up to other schools,

“it would definitely be useful but I for this year don’t think we are on par, I don’t think we have anything to offer, maybe next year when we have all the stuff in place you know”

This area including possible reasons for a school seeing the benefits and yet failing to collaborate with other schools will be revisited in the Discussions chapter of this study.
4.2.7 Examining the beliefs and views of the ICT Coordinator

This final section of initial analysis from data obtained in interviews will address areas such as what coordinators believe to be innovative use of ICT, in their school how does ICT contribute to effective teaching and learning, we will examine what the coordinator believes is the status of the post within the school and finally if they believe that ICT integration has been successful in their school. When the participating coordinators were asked about their view on what would represent innovative use of ICT in the classroom, no two coordinators gave the same response. One coordinator suggested that “it’s only innovative if it’s doing something that maybe isn’t main stream practice” when asked to explain that the following was the response,

“Well the use technology in teaching and learning it isn’t altogether in the mainstream at the moment. For example people would be comfortable using PowerPoint or using technology to make a presentation, which is one thing, but actually getting the students to use the technology, to get them involved in interactive learning in project based learning, using technology in research work; I don’t think there is a great deal of that going on. So it’s trying to get student to learn collaboratively to use their research skills, to do project based learning, things like that using technology, I think that is probably innovative because it’s not mainstream but I think there is lots of tried and tested approaches to doing that and there is just maybe not a lot of experience with it in secondary schools. So it’s innovative in the sense that it is new it’s not common practice but it’s not ground breaking, extraordinary, inventive and creative approaches, its already being used somewhere else just to start bringing it into your own classroom”.

Other coordinators were unsure how to describe what the term meant to them, even one suggested “it’s a makey upy term”. Another coordinator suggested that getting the basics right in education was more important,
“I suppose it's a relative thing, we could all be talking to people in Australia about sheep farming on conference call and stuff, but we could be doing lots of that stuff and that would be great, provided we could read and we could write and don’t forget add up”.

Another coordinator suggested that innovative use was “supportive to the learning”

Coordinators were also asked in their opinion how ICT contributes to effective teaching and learning. One suggested that it “gives students a different perspective on the world”, another suggested its contribution would depend on “how well you use it”. Another coordinator believed the contribution ICT would make would depend on the “expertise of the teacher, it’s as simple as that really” and another suggested that the contribution ICT makes is “developing”. One coordinator did offer a good example in his own teaching where ICT had contributed to teaching and learning,

“Visuals, like I was on one thing, I teach Construction Studies myself and I was on a web site the other day where it showed a video from a particular web site of the stages of building a timber frame house, and you had their attention straight away, they were clued into it. They could actually see the house being developed, it was just a 5 minute clip and straight away they were tuned into what was going on, there was, you could see that they were taken in by it like and they were paying attention. They could actually see in front of them the whole thing taking place step by step by step. Like you can’t explain something like that, no matter how much talking you do from the top of the room, you can’t explain something like that, do you know”.

An issue that required probing from the findings of section 1 of this study was that of the status of the post within the school. From section 1 where 41% of schools did not have the ICT coordinator as a post and that 68% had no time
allocated to the post. Given the demands on the post that the literature and
the first stage of this study show to exist, with no hours and some without a
post, how is the role of the coordinator viewed within the school. The findings
are mixed from school to school, in one case the coordinator believed that
the post was not valued, he suggested,

“I really don’t think they see the value of it until they come in and see
the printer is broken or this is not working. I don’t think they see the
work that goes into it”

Another coordinator felt that the status was “blurred” but agreed with the
previous coordinator that the role was not appreciated,

“I don’t actually know to be honest, I have never actually thought of that
you know, probably not, because you find that you think you have done
brilliantly, every classroom has a data projector, two days later, it’s like, carry on”

For two other coordinators the post was seen as a maintenance post by the
other teachers, one suggested that teachers “well they come to me looking
for help when there is a problem”. This however was not the case for all
coordinators, the participant where the role had evolved into the E-learning
coordinator offered a detailed and comprehensive analysis as to the possible
reasons for the poor status of the post and also an example of how the
status can be improved,

Coordinator 5:  I think the status of it is quite high and growing
because it’s really a top down thing there. Senior management in the
school, the Principal really views E-learning as a growing area of
increasing importance and he is trying to position the school, to be able
to be, if not as a centre of excellence, certainly to be on that road on
that journey of integrating ICT into Education and he understands that
one of the key roles in achieving that is in our case, the E-learning
coordinator. So the post I think is growing in its status within the school
and that will probably be better off next year when I have time. So yeah
I know for example I will have time next year, I know it wasn’t possible
to make it available this year, but I know it will be made available next year and I know that because the post is seen and being one where it needs time, it cannot be properly executed if you don’t have the time.

Researcher: Yeah.

Coordinator 5: I do think there is an issue with the status of the post nationally.

Researcher: In what way.

Coordinator 5: I don’t think that the role of ICT coordinator is valued enough in schools nationally, from my own discussions with ICT coordinators in other schools and I have done training for ICT coordinators and I know that is an issue for ICT coordinators and that will be reflected in things like, whether it’s an A post or a B post or whether there is time allocated with it, I know that is an issue nationally, probably not so in our school.

Researcher: Can it be resolved.

Coordinator 5: I think it can yeah, I mean, there are certain posts in schools, posts are based on answering the needs of a school, now the needs of schools are changing, and one of the needs that’s going to be more of a part is E-learning, and integrating and developing an E-learning culture and it is understood from the ICT framework and various other reports that the E-learning coordinator has a key role in integrating ICT in a school and if that’s a greater need for schools and if that role is becoming of increasing importance then the role needs, if not redefined, certainly re-evaluated. So for example a year head is an A post, in every school it would be an A post. I think there is going to have to be a shift in the culture valuing posts in schools and the E-learning coordinator, ICT coordinator is going have to be brought higher in the pecking order and how that is achieved is a different issue. But fundamentally it is going to have to come from the senior management in the schools.
This finding offers good insight into the problems ICT coordinators face within the school and also how with the aid of Senior Management a resolution can be found.

The final area discussed with the participating coordinators was aimed at examining their beliefs if ICT integration has been successful in their school. All coordinators were positive in their response, they did believe that ICT integration was and is being successfully integrated into their classrooms. Could these coordinators continue in their posts if they didn’t hold this belief, with little or no hours attached to the post, a post that is highly demanding of time and skills, could they still do the job if they didn’t hold the belief that ICT integration was working. Positive responses varied from “I think it has been more than most schools” and a number of coordinators suggested that it was still “evolving”.

More than one coordinator did mention the benefit ICT integration has had for students,

“It has, has it been successful, yes it’s been successful. Is it as I said before it’s not I wouldn’t hold it up as any model school or anything like that. But yeah we have taken it on board and I was amazed that we have taken it on board in a number of subject areas and we have made it work, now it’s not massively innovative and we are not doing all sorts of European or Worldwide projects or anything like that but I think we are serving the kids well”

Another suggested that the drive to integrate ICT was actually coming from the students, “definitely the kids are pushing it whatever about the teachers”.

The level of positivity from the responses was surprising, considering most of roles are operating without any hours allocated. One coordinator offered this response,
“Absolutely, absolutely, yeah. There has been a very good response to it from staff; there is no reluctance there for using it, certainly not from kids and not from teachers either. I can safely say if the equipment was made readily available to all teachers they would have a go at using ICT in their classroom”

However in the same sentence the coordinator continues,

“but a lot of it is a confidence thing as well, that they wouldn’t be overly confident with using it, 70% of the teachers certainly wouldn’t be overly confident with using it, because they wouldn’t have used it before”.

Finally the last word on whether ICT integration has been successfully integrated into their school is described by the E-learning coordinator as a journey, it includes important aspects regarding the changes within a school that are necessary for ICT to succeed,

“Yeah I think, yeah it’s been very successful, I think we have been fortunate that the Principal has been very proactive in doing that, achieving that, but while I think it’s been very successful I think there is a very real awareness in the school that it’s a journey, it’s a road that you travel and the important thing is to be on that road and to be travelling it purposefully, that it’s not something, it’s not just like switching on a light, you can’t get it right over night, its more about having a culture of change and development regarding E-learning and a willingness to engage and I think that’s what we have here, and I think that’s what’s successful about it, rather than the school being a centre of excellence, I know that we are doing a lot of things wrong but probably the good thing is that we are certainly we are on that journey of developing E-learning in the school and that is the important thing”.

The findings from this subsection show that no two coordinators offered the same description of what constitutes innovative use of ICT; however the term innovative is used extensively in the literature when ICT is discussed. If coordinators do not have a clear definition of what constitutes innovative use
then how can they be expected to deliver innovative use. This subsection also examined the beliefs of the coordinators regarding how ICT was contributing to teaching and learning. The issues surrounding the status of the post within schools shows the post to be largely undervalued, and mainly a maintenance role, whether this is due to the category of the post being an A or B post within the system or whether it is due to wider issues will be revisited in the Discussions chapter.

4.2.8 Other Issues to Emerge from the Study

From analysis of the data two themes were consistently observed throughout the interview process. These themes are evident although no coordinator uses either term directly, the evidence appears only as an outcome of the analysis performed. The first of those themes was that each coordinator interviewed portrayed a high level of confidence. They consistently offered examples that alluded to this confidence when discussing their roles. Examples offered when questions were asked about if they felt they had the necessary skills, “yeah, I have enough skills to do it”. Others replied “if I need to find out something I would go on the net to find out”. This sentiment was echoed by another coordinator “you just go and find out how are things are done and learn it”. It is not however just in relation to maintenance where coordinators have expressed confidence, coordinators seemed confident and comfortable setting boundaries in regard to what they would and would not do in relation their post as ICT coordinators. One coordinator would not even consider training staff in the use of ICT, an area of responsibility that he would not even entertain, “no, absolutely not”. Another set out boundaries with regard to maintenance,

“if something is broken in the school I don't feel that I have to fix it, my role is to liaise with our ICT support and ensure they can fix the things in a timely manner”
Coordinator 2 set out boundaries that he would not include timetabling within his duties “I just don’t want to go down that road” and again on the issue of updating the schools website “I don’t want to have the mundane task of uploading information everyday”

The second theme to emerge from coding the interviews was the level of dedication shown by coordinators in performing their roles. This dedication in its most basic form is shown by the fact that many are still performing the role despite receiving no time or payment for the role. Not only are they performing the role, they appear for the most part happy in the role, “It’s quite rewarding”. The demands associated with the role have been expressed by various coordinators during this section of the study. An example of this was offered by one coordinator when he explained

“I imagine it’s the same for your average ICT coordinating teacher, you cannot walk down the corridor without someone approaching you regarding one issue or another, it is an incredibly busy post”

Another explained that even with an ICT contract in place maintenance can still require staying behind after school finishes,

“if you are dealing with IT if something goes down in the morning and we need such and such, I have to ring a guy to come in, the guy has to be rung to come in, I can't wait until Tuesday, so I might stay back after school”

The same coordinator suggested that time was critical for ICT to succeed “it needs a lot of time”. With the current level of ICT infrastructure in post-primary schools increasing this will inevitably lead to increased workloads for ICT coordinators, “more work for coordinators” was offered by one when asked for an opinion on DES introducing laptops for teachers.
4.2.9 Broad Summary of Key Findings

The findings in this study show clearly that the role of the ICT coordinator in schools is not a prestige’s role, it also appears it is not a sought after role within the school. This was highlighted by the fact that none of the coordinators in the participating schools had applied for the post, most ‘just fell into the role’ and that almost all those coordinators that participated stated their belief that no other member of staff would want the post. The findings also highlights the lack of time given to coordinators to perform their duties as coordinators and that half feel that they do not have the necessary skills for the post. The fact that so many are performing the role based on ‘goodwill’ allied with the other findings mentioned above must raise questions concerning the status of the post within school. The issue of the status of the post was discussed in interviews and will be further analysed in the next chapter.

The findings also highlight the diversified nature that the participating schools demonstrated in how they are integrating ICT, to what level they are integrating ICT and how important ICT was seen within each school. The level of diversity was such that of the nine coordinators interviewed, no two schools had followed a similar trajectory in attempting to integrate ICT. The reason for the level of diversity and disparity reported in the findings can be directly as a result of a lack of national policy, presented in the findings of this study is evidence that the coordinators believed that much of the diversity could be resolved with collaboration between schools on ICT issues. Despite seeing the possibilities that collaboration with other schools could result in, none of the schools coordinators that were interviewed were currently involved in active collaboration with other schools.

Further findings show that the role is still largely a maintenance role and few participants offer any form of pedagogical support. In the area of technical
support coordinators during interviews expressed that a form of centralised support of ICT resources within the school would be beneficial. ICT coordinators that participated in this study showed themselves to be confident and dedicated professionals who believe in the integration of ICT into the classroom. They believe that integration can improve the learning experience for both the teacher and the student. However the findings revealed that most coordinators were unsure how to move forward with ICT within their schools and now required guidance from the government in the form of vision, leadership and documentation that will guide schools on the path to successful integration of ICT. This is further discussed in the next chapter. Also in the next chapter, the discussion chapter, the findings of this study will be compared with the literature available from other reports and studies carried out in the past; this will form the basis of the discussion chapter.
Chapter 5

Discussion

5.1 Introduction

Analyses of both the quantitative and qualitative sections of this study show that the factors affecting and influencing the role of the ICT coordinator and the integration of ICT into schools are multi faceted. The pressures associated with the post of ICT coordinators are present on both a macro level coming from government and on a micro level from the school principal and teachers within their own school. Attempting to implement ICT integration, while also successfully juggling both macro and micro pressures is just one of the many skill sets required by today’s ICT coordinator. The title of this study is to examine the role of the ICT coordinator in providing technical and pedagogical support in Irish post-primary schools and to present these findings, the purpose of this study was not to present solutions to the problems faced. However in presenting the findings and in this chapter discussing those findings it is inevitable that within this exploration and debate that this chapter may offer possible solutions derived from analysing the data in order to complete the discussion.

From the findings chapter, as stark and surprising as some of the findings where, the literature shows that the issues arising from this study for the most part are not new. In fact the largely reoccurring issues would suggest that little has changed in the problems faced in the proposed integration of ICT in post-primary schools over the past decade. These key issues of infrastructure and resources, the level of ICT use within the classroom, teachers positive attitude, pedagogical content knowledge, the evolution of the role of the coordinator, collaboration and finally the status of the post within schools are all discussed within this chapter under different
overarching sub headings. The three sub headings within this chapter are the static nature of ICT in Irish schools, diversity and disparity between schools and finally reviewing the role of the ICT coordinator. So why has the integration of ICT into the classroom not progressed at the expected rate? What are the issues that have caused the evolution and integration of ICT into the classroom to essentially stagnate?

5.1.2 The Static Nature of ICT in Irish Schools

This section will discuss the evidence that points to the stagnation of ICT integration in Irish schools. In the literature review this study identified areas such as the teacher, the school principal, teacher educators and prevailing schools cultures as some of the key barriers that in the past prevented successful integration of ICT into the classroom. However the findings from this study have shown that many of the barriers outlined above that have been prevalent in the past have to a large degree dissipated or certainly weakened in resistance as potential barriers.

This study has shown that most teachers now possess a positive attitude towards integrating ICT into their classroom. The schools surveyed believed that the ICT equipment in their school was of a good or very good standard, although some schools did specify that they didn't have enough equipment. A number of the coordinators interviewed suggested that the principal and management within the school were supportive of the coordinators efforts to integrate ICT in the classroom. Also coordinators interviewed suggested that the new and younger teachers coming into their schools were more au fait with using ICT in their teaching, suggesting that teacher education programmes were now equipping the student teacher with the necessary skills to help integrate ICT to support teaching and learning. These findings show that the barriers previously reported in this report such as the teacher, the school principal, teacher educators and prevailing schools cultures have
to a large extent been resolved and as barriers associated with integrating ICT these issues have certainly become more diluted in recent times.

However despite all the positivity shown in the Findings chapter towards integrating ICT into teaching and learning, little evidence exists that shows clearly how today’s schools are integrating ICT any differently than schools a decade ago. The critical issue is no longer with how many computers are in a school; this resources barrier that continuously presented in the literature review as a low student to computer ratio, has resulted in large spending by government to address this ratio. However the findings in this study showed that the two schools with the best student to computer ratio were in the most disadvantaged areas. No evidence presented to the researcher showed that the integration of ICT in both these schools was anymore successful than in a school with a high student to computer ratio. However the fact that the two possibly most disadvantaged schools in this study had the lowest student to computer ratio suggests that the DES believe that ICT resources are important. Research continuously indicates that computer access is necessary but not sufficient for establishing technology integration in the classrooms (Ross & Lowther 2003; Smeets 2005). So if the infrastructure is not the critical issue, what is?

One of the critical issues is that in the literature when a researcher describes how ICT can improve teaching and learning, they describe a learning environment that is more student centred, more constructivist than instructivist. However noted by McGarr (2008) is that there has been little evidence that the introduction of ICT changes pedagogy, particularly to a more constructivist learning. Student centred learning would allow for the learner take a greater role in how they learn. In the UK, ICT is seen as a motivational tool for disaffected learners, enabling them to learn in ways that suit them, and encouraging creativity (BECTA, 2009). Both the challenge and the problem for this type of learning environment then is that within the Irish schools system, the teacher is seen as the key holder to information and a
text book exists that shows students the right answer, if they learn the answer, they do well in exams, how then can the student use ICT to learn in ways that suit them, when how they are learning is so centralised. The change in practice and philosophy required to allow for successful integration of ICT and to then use ICT to improve teaching and learning and those practices currently being engaged in Irish schools are polar opposites. How can ICT really change how today’s students learn when the proven track record exists to show that learning the contents of the text books and regurgitation of this information are a proven means for students to succeed in examinations. One of the coordinators interviewed in this study offers a good example of the divide that exists,

“for example at leaving certificate, that what students really want is notes. They want notes, they don’t want to be distracted by perhaps more student orientated, student centered learning or approaches, because there is a culture of notes, and there is a culture of achieving at examination, so it challenging for the teacher to move beyond that culture when it’s still anchored to the exam itself”

Another critical issue that goes towards explaining why despite millions spent on improving ICT infrastructure in schools little has changed over the past decade is the lack of a national policy document to show a clear vision of where ICT and Education will be in 10 years time. Mulkeen (2002) in evaluating the use of ICT in Irish schools following the Schools IT2000 initiative found that it had only a minor impact on use within schools. Mulkeen’s research found considerable variation in the use of ICT in post-primary schools, this variation he attributed to ‘the absence of clear guidelines or regulations about how ICT was to be used’ (p. 3). Without providing a policy document that not only shows how ICT will improve teaching and learning but how schools should be using ICT to improve teaching learning then schools will continue to develop ICT on an ad hoc basis.
Standing back briefly to examine the summary of key findings in this study, how different would those key findings have been had this study been carried out 10 years ago, or more poignantly if this study was carried out again 10 years from now, how different would these findings be. Reviewing the history of ICT in the Irish education system leaves this researcher with little optimism that much will change. In a report to the Minister for Education and Science entitled The Impact of Schools IT2000 (2001) it highlighted that three fundamental issues had emerged from their study, firstly the need for more training, secondly the need for more funding and thirdly the need for more support (technical). The same report also made the following recommendations, that the Department of Education and Science should state clearly its policy for ICT in primary and second-level education. This report focused on providing computers and support for those computers, described by Ertmer as first order barriers; however the report fails to recognise or even mention second order barriers such as school culture, and teacher’s beliefs and pedagogies.

Another report by the NCCA (2004) in their paper Curriculum Assessment and ICT in The Irish Context; present at the core of their ‘vision’ for ICT in curriculum and assessment was ICT literacy for all students. The same report goes on to say that this vision is premised on the value of enabling our students to become capable independent learners, with the ability to communicate effectively, work collaboratively and critically evaluate manage and use information. In the current school system, 7 years later, is there any evidence that any element of this vision has come to fruition. Based on the findings of this study, it would appear they have not. History shows that little will change without vision, clarity and direction from government. This vision and direction was entrusted to the National Centre for Technology in Education (NCTE), however the findings from this study show the NCTE to date have had little impact on how ICT is used in schools and had no impact in changing how teaching and learning happens within the schools surveyed. For ICT integration to now move forward a middle ground must be found. This middle ground lies between the macro pressures being applied by the
government or more specifically the NCTE and the micro pressures being applied by teachers and management in schools, the issue of what is required to provide that middle ground is discussed later in this chapter.

Thankfully considering the current economic climate the catalyst for change is not in providing schools with more and more ICT equipment; this being the only element of previous reports recommendations that have been implemented, the catalyst for change is in providing schools with a vision.

5.1.3 Diversity and Disparity between schools

This study has highlighted the level of diversity and disparity that exists within different schools in how they are attempting to integrate ICT into their school. This study has highlighted that schools have evolved at completely different rates and to varying degrees of success when it comes to integrating ICT into the classroom. No two schools in this study had followed any predetermined path, and no trajectory of ICT integration was evident from analysis of the findings in this study. Fuelling this diversity and disparity is the lack of national policy as discussed in the previous section, however even without policy if constructive collaboration between schools existed much of the diversity and disparity that currently exists could be eliminated.

This lack of collaboration was clearly shown in the interviews conducted for this study; and although almost all coordinators could see the possible benefits from collaboration on ICT with other schools, no collaboration was taking place. Parker and Axtell (2001) suggest that for champions to motivate and promote new technology they need to adopt multiple perspectives and work collaboratively with others. BECTA (2004) agreed with this sentiment and suggested that working with other local schools have found this to be a
useful way to identify successful practice and to sustain teachers’ motivation. In Flanders collaboration is considered to be of such value that in order for schools to receive funding for ICT they must set up cooperation with other schools (Tondeur et al. 2008)

The lack of collaboration reported in this study has allowed each school to develop ICT in a completely ad hoc fashion. Mistakes made by schools are repeated again and again in other schools due to a lack of collaboration. This lack of collaboration in addition to a lack of national policy documentation has allowed each ICT coordinator to determine how ICT would be integrated into their school. Hence the personal entrepreneurship of the ICT coordinator in each school directly affects how successful that school will be in integrating ICT. This power given to the coordinator to determine the level of success that a school will attain in integrating ICT could account directly for the lack of success attributed to ICT in Education. The finding from this study has shown that none of coordinators interviewed had applied for the post, some were deemed suitable, while some were just next inline for a post, and all describe it as more or less “falling into the post”.

As shown in this study the role for one coordinator had evolved from that of ICT coordinator to E-learning coordinator. In this new role the key aims and objectives were more pedagogical that technical, being cognisant that coordinators determine to a large extent the role the coordinator will play within the school, would the coordinators currently working in the role as ICT coordinators have the required drive, foresight and knowledge to evolve into E-learning coordinators. Could the current ICT coordinator within a school evolve from IT janitor to pedagogical leader? This evolution is further examined later in this chapter under the sub heading Reviewing the Role of the ICT Coordinator.
In further analysing the disparity that exists and how different schools have attempted at different levels to integrate ICT into the classroom the use of Rogers (1995) diffusion of innovations offers more clarity. Firstly and possibly explaining another element of why ICT is viewed as failing is that this single term ICT is used to cover a multitude of technological innovations. The PC, laptop, interactive whiteboard, broadband, the internet, Web 2.0 technologies are all different technological innovations yet all are considered to be ICT innovations, as opposed to each one being viewed individually as an innovation. Could this single umbrella term of ICT adequately convey and encapsulate each of these different technological innovations. Applying Evert Rogers (1995) diffusion of innovations theory to this element of the study can show with diagrammatic clarity the path taken to date in attempts to integrate ICT into the classroom and compare this visually to the acceptance of the innovation of the mobile phone. The purpose of showing the early acceptance of mobile phone use is purely for graphical effect and no comparison between this innovation and integrating ICT in schools is being drawn in this research.

![Graph showing the diffusion of innovations for mobile phone use and ICT integration](image)

**Figure 22**
Figure 22 is a graph of time versus number of users. In Figure 22 we can see the early adopters; these are people who are quick to make a clever connection between innovations and their needs. Also shown in Figure 22 are laggards, these hold out until the bitter end, they are associated with being people who see a high risk in adopting a particular product or behaviour. Figure 22 shows how quickly a large number of people became early adopters when the mobile phone was the technological innovation, this curve represents that most accepted the innovation very quickly. Contrastingly with ICT integration the graph shows that few were early adopters and that the number of users increased at a much slower pace. Brady (1987), commenting on his experience at that time as an ICT enthusiast teaching Maths in a post-primary school, noted:

“Only very enthusiastic, very computer orientated, teachers were involved at this time [early seventies] ... most of us who became involved at this stage had only the vaguest idea of what computing was about. We were motivated more by curiosity about the new technology than by educational considerations but, in general, teachers who got involved at this stage intended to teach Computer Science”. (pp. 46–47)

The graph in Figure 22 shows a clear reluctance on the part of teachers and schools to integrate ICT and the causes of this reluctance or barriers have been previously presented in this study.

If the findings from this study were plotted on the graph shown in Figure 22 the result would show schools appearing at different points along the graph. As the findings from this study have shown different schools adopted ICT at different times and to varying degrees of integration. The diversity allowed to prevail in the area of ICT in schools will continue unless clear changes to both the prevailing culture within schools and the lack of clear national policy are addressed.
The exploration of collaboration between schools could result in a rich learning environment, where ideas are shared, problems discussed and teaching and learning are the focus. Previous research has echoed this sentiment, that the establishment of a professional learning community as a means to renew both teachers and schools is a common recommendation in the professional development literature (Grant, 1996; Guskey, 1995; Little, 1993). The area of technology is just a distraction; the goal is improved teaching and learning however the literature has yet to show clear evidence how ICT directly improves how the learner learns. According to Inan & Lowther (2010) there is insufficient empirical support to claim that access to technology has either increased test scores or improved the quality of instruction to enhance student learning. Also according to Hancock, Knezek & Christensen (2007) there remains in the field of Educational Technology a serious lack of consensus as to what measures of technological innovation on the part of the teacher transfer to academic achievement on the part of the student.

Perhaps the goals and role set out for ICT are unrealistic and unattainable as suggested by the literature, or perhaps as suggested by the findings in this study schools just don’t know what the goals are or how to achieve them, that today’s schools lack vision.

5.1.4 Reviewing the Role the ICT Coordinator

The findings from this study and indeed the literature show the post of the ICT coordinator to be a high pressure post. Being responsible for the upkeep of all the computers within a school with little or no time allocated for this responsibility perhaps explains in itself why the role is not a sought after position within the school. On a national level, the macro pressures associate and align the post of ICT coordinator to that of a pedagogical leader. However the micro or the local environment where the coordinator works i.e. in a school, they see the post as a technical support post, can we realistically
expect one person with no hours allocated to meet either of these demands. This issue was addressed by Marcovitz (1998) when he stated that the computer coordinator may serve several roles, but the most dominant is meeting the immediate needs of teachers. However according to Lai and Pratt (2004), the main responsibly of the ICT coordination is especially to guide ICT integration in teaching and learning (curriculum support). These are two examples taken from the literature that highlight the dual aspects and problems associated with the role of ICT coordinator.

The findings of this study show that of the coordinators that participated, 49% felt that they didn’t have the necessary skills demanded of the post. This finding is not at all surprising when the levels of disparity of duties for different coordinators in different schools are also shown in this study. Again what is clearly lacking is a national policy document that sets out the responsibilities that should be encompassed within the role; the parameters of the role within the school need to be defined. Without clear instruction and documentation it can be assumed that each coordinator will create an environment that best suit their skill set and not necessarily the schools needs. The finding that shows that so many suggest that they do not have the skills required to carry out their role as coordinator would however suggest that coordinators are aspiring to be something they believe, or are being told by management and teachers in the school they should be, that of the main supporter of all things technical.

So how can coordinators evolve within the school to become the pedagogical champions the policy makers expect them to be? The term champion here reflects that in the literature, champions are seen to play key roles in advancing or supporting the introduction of new technology into organizations (Neufeld et al., 2007; Parr & Shanks, 2000; Rogers, 2003). For the role of the ICT coordinator to evolve a number of changes in current custom and practice are necessary within the school. The first step would require a move away from the hands on technical support role provided by
the coordinator to a role where the coordinator is the liaison person who manages the IT infrastructure with the external support company providing the hands on part of the role. This requires coordinators to oversee the management of the IT resources as opposed to being the actual technician. This sentiment is echoed by Vanderlinde et al., (2009) where they state that the implementation of a technology curriculum in Flanders has meant changes for the role of ICT coordinators to that of a more managerial role as a change agent was necessary, this suggests a move away from that of a technical hands on role.

Secondly coordinators will require the time necessary to become pedagogical champions within their school. The lack of time available to coordinators in schools has presented as one of the key findings of this study. The literature has long advocated that necessary time be allowed or integration will most likely not succeed. Today’s coordinators need more time, time not only to carry out the duties associated with the post but time for structured and specific CPD. The CPD for coordinators would need to be based on how to learn with computers as opposed to learning about computers. If both the CPD and technical support measures were in place for coordinators within the school system, given the right tools they could evolve to become the schools E-learning champion.

The findings from this study show that coordinators have the required level of dedication and belief in ICT to improve teaching and learning, so before that dedication is lost and they become disillusioned, it should be harnessed. What will be involved in harnessing this dedication? What do coordinators require to become proactive leaders in the E-learning culture? The literature has levelled criticism at the Irish schools system for being too centralised, researchers have noted that ICT will not flourish in a highly centralised environment. However as no policy documentation currently exists to nurture and direct current practice in relation to ICT in schools, should ICT not be
proving more successful as a consequence?, or are policy documents the missing link required to drive ICT forwards. The following is a graphic representation that describes the various roles and types of ICT coordinators in Irish post-primary schools. The two main areas associated with the role of ICT coordinators in Irish schools are that of a technical role and the pedagogical role. Both are shown on opposite’s sides of the x-axis. On the y-axis are leadership and reactionary. The reactionary group represents coordinators that react to the schools needs. The role of these coordinators would be dominated by local or micro policies, their roles would be mainly technical and this group would represent the majority of coordinators in Irish post-primary schools. Whereas leadership refers to those who do not wait for something to happen, but rather show initiative to make things happen. Those who would represent leadership would be aiming to meet school and national visions; they would stay in touch with emerging policies and keep themselves informed of emerging technologies that could improve teaching and learning.

Figure 23
From Figure 23 the dilemma presented to each ICT coordinator in Irish post-primary schools is evident. There is pressure for coordinators to move from Quadrant 2 where they are mainly reacting to school needs, to Quadrant 4, where they will be providing vision and leadership, promoting E-learning within the school. For ICT to fully integrate and to now move forward, ICT coordinators, who are proven to be a key factor if successful integration of ICT within the school is to be achieved must follow the path shown in Figure 23 and move from Quadrant 2 to Quadrant 4. At present in the Irish education system most ICT coordinators would reside in Quadrant 2, where their role is mainly technical and their attitudes and beliefs reactionary in nature. Within the confines of Quadrant 2 most coordinators will feel comfortable within their role, thus moving them away from their comfort zone, to what is in effect a new and completely different role will not be easy. If the majority of ICT coordinators in Irish post-primary schools were placed on Rogers diffusion of innovations graph, they would be represented in the same area as laggards.
Figure 24 shows a graphic representation of the nine coordinators that
participated in the qualitative section, Section 2 of this study.

![Figure 24](image)

The graphic representation shows four quadrants where current ICT
coordinators in schools would currently fit into. Shown on the diagram are the
nine ICT coordinators that were interviewed. They have been placed on the
diagram based on the data analysed from both sections of this study. As
shown six of the nine coordinators that participated are placed in Quadrant 2,
one of the six is shown to be nearer the x-axis heading towards Quadrant 4.
This coordinator exhibited very positive pedagogical leadership values and
did view the future of the role as focused more on the pedagogical element
of the role rather than the technical side of the role. The other five
coordinators all exhibited reactionary characteristics, their roles were earthed
in providing technical support to the teaching staff within the school. They
would react, rather than lead.

Two coordinators are shown in Quadrant 1 of Figure 24. One of these
coordinators, Coordinator 7 had shown leadership in obtaining laptops for all
staff and installing ceiling mounted projectors in all the classrooms. This coordinator had shown leadership in procuring what he felt was the necessary infrastructure to enable ICT to contribute to teaching and learning. This coordinator did not wait for the DES to supply the infrastructure, a need was identified and that need was met. This same coordinator now required and requested guidance, a vision, now that the entire infrastructure was in place, how is it going to be used. The other coordinator, Coordinator 2, shown in Quadrant 1 was moving towards becoming a pedagogical leader, it could be argued that this coordinator had accepted his limitations with regard to providing an ICT vision for the school, but he had the foresight along with the school management to appoint a teacher who would drive the pedagogical E-learning element of integration, full interview available in Appendix 6.

One ICT coordinator, Coordinator 5, was placed in Quadrant 4 this ideally is where all the coordinators would reside; the full transcript of the interview is shown in Appendix 7. This coordinator had overseen the evolution of the role from ICT coordinator, to become the schools E-learning coordinator. If this coordinator was placed on Rogers diffusion of innovation, he would be seen as an early adopter. In this new role within the school the E-learning coordinator will provide the vision and training required to successfully integrate ICT into each classroom, across the curriculum. From the interview, The E-learning coordinator explains, “it’s a leadership role really; it’s about giving vision and direction to E-learning in the school”. When the E-learning coordinator was asked about a job description, he offered he following,

“I think first of all that it is fundamental that there is somebody who is accountable for the management of the ICT infrastructure that’s a given, also the development of an appropriate and sustainable ICT infrastructure, you need to understand the technology and the application of the technology. So yes you would have to oversee the maintenance of the ICT infrastructure and moving forward, the development of appropriate infrastructure for the needs of the school so
that's definitely the role of the ICT coordinator but at the end of the day the technology is there for teaching and learning and it needs somebody to promote the development of an E-learning culture in the school and to enable teachers to integrate ICT into their teaching and learning, that is what I would see is the core role of the E-learning coordinator, as he is called in our school and that is where I think it should be, I'm not saying there won't be a knowledge and understanding and management of the technical aspects of it but that shouldn’t, you have got to get the balance right, it's got to be about the application of the technology and promoting that and I think that will become in any case increasingly a part of what E-learning coordinators, ICT coordinators will find themselves having to do”

As shown in Figure 24 most ICT coordinators would reside in Quadrant 2, this is not surprising given the highly centralised focus of the current Irish education system. It is highly surprising that more coordinators are not in Quadrant 1 given the lack of national policy as the findings in this study show how the ICT coordinators personal entrepreneurship can influence how successful ICT will be integrated in a school. The findings in this study are not only relevant to ICT coordinators, as previously stated all but one of the coordinators that participated in this study are fulltime teachers, hence Figure 23 and Figure 24 can be equally relevant to all teachers within the school system.

The absence of a clear and effective national policy on ICT that currently exists in the Irish Education system has two effects; firstly on the surface there is a perception that schools have the freedom to integrate ICT freely, without the centralised systems that dominates the Irish Education system. However without an overarching vision, little or no exploration is likely to take place. The reason for this lack of exploration is all or any exploration may be seen as a failure.
5.1.5 Summary

The question now is what is required from the DES to initiate a migration of coordinators from Quadrant 2, which is technical/reactionary to Quadrant 4 which is pedagogical/leader. What it certainly does not need is more resources and a larger infrastructure, and it currently does not require further technological innovations. Neither does it require centralisation, what ICT in Irish post-primary schools needs now is vision and leadership. They need a vision to shed light on the potential of ICT, a vision that will stop coordinators shooting in the dark and guessing what might and might not work when it comes to ICT integration. This will remove the element of fear associated with exploration. This is the dichotomy that currently exists for the DES and more so the NCTE, do they continue to throw money at attempting to integrate ICT into the classroom; or do they now provide a vision, leadership and empowerment to all coordinators in schools to help them to become pedagogical leaders, E-learning coordinators.

This vision should be represented in the positive form of tailored continuing professional development made available to coordinators, the time required by coordinators to drive this innovation, and as highlighted by Coordinator 5, a revised status of the post within schools from that of a B post to an A post to reflect the importance of ICT in today’s schools. Under writing this positive vision should be a new national policy document, a clear guide and vision of where ICT and Education will be in 10 years and a clear path showing how to get there; having this document would remove the disparity and diversity that currently exists across the system. Providing coordinators with this vision also removes another barrier surrounding pedagogical content knowledge, coordinators will not need for example to have in-depth knowledge of the syllabus of the Leaving Certificate History to help the History teachers in the class integrate ICT, the coordinator will only need to show those History teachers the potential of how ICT can improve teaching and learning for the student regardless of the subject.
Chapter 6

Conclusions and Recommendations

6.1 Introduction

This study has examined the role of the ICT coordinator in 37 post-primary schools in the mid west region. The study not only examined these roles, but also reported in the literature review the main barriers to integration of ICT in post-primary schools. The purpose of reviewing the expansive literature in all areas of ICT related to Education, not just in relation to the role of the ICT coordinator was to show the multi faceted nature of the problems associated with integrating ICT in schools. The success of the integration of ICT in schools is not dependent on any one individual factor, but is determined in a dynamic process involving a set of interrelated factors (Ten Brummelhuis, 1995). Moreover, no single solution exists to address the immense challenges of ICT integration because different perspectives of integrating ICT can be chosen (Becker, 2001; Niederhauser & Stoddart, 2001).

6.1 Conclusions

Analysis of the data collected initially from the 37 schools showed that many barriers presented in the literature both nationally and internationally had to a large degree been overcome. As presented in the literature review the teacher was the single largest obstacle to be overcome if ICT was to successfully integrate into the classroom. The findings from this study show that most teachers now possess a positive attitude towards integrating ICT into their teaching and some feel energised by what ICT could bring to teaching and learning. However having the technology and the positive
attitude alone will unfortunately, achieve very little towards integrating ICT effectively. As stated by Dias and Atkinson (2001) effective integration of technology has everything to do with teaching pedagogy and very little to do with the technology itself. We should not be impressed with the mere "use of technology" unless that use is supported by a carefully crafted pedagogy. For full and successful integration of ICT to occur will also require a shift in both school culture and curriculum assessment.

From the findings we have shown that for all participants the quality of the technology currently in the schools was classed as either good or very good. However effectively integrating ICT into learning systems is much more complicated than just providing computers and securing a connection to the Internet. In fact, the integration of ICT is associated with a shift from instructivist to constructivist philosophies of teaching and learning (Barker, 1999). Another issue is with the short life span associated with today's technology, how soon until the PC in today’s school begins to be referred to as old technology, five years, maybe less. Also on the resources end and considering the short life span of today’s technology, has the DES a plan for how it will deal with replacing all the resources currently in schools?

The ICT coordinators that participated in this study exhibited dedication, loyalty and belief that ICT could improve teaching and learning. Presented as one of the findings from this study was that the post of ICT coordinator is an add-on post, their job was to teach, they were teachers. The role of coordinator is in itself an extremely busy post when you add to this a full teaching schedule, going forward this is simply not sustainable. However despite these facts 37 out 44 schools and subsequently ICT coordinators contacted elected to participate in this study. This represents a response rate of 84% from coordinators in schools invited to participate, this researcher believes this response rate represents a genuine sense of relief and
gratitude from coordinators that somebody was taking the time to fully investigate their roles.

The negative findings discovered in process of completing this study were that so many coordinators were operating in the role without a post of responsibility, even more had no time allocated and half felt that they didn’t have the necessary skills required of the post. In the view of this researcher these are areas that the government and the NCTE need to address urgently. The government should offer more support to schools in the form of funding for CPD for coordinators and teachers in the area of ICT. The time should be given to coordinators to drive and show their enthusiasm to other teachers in the hope that they will explore ICT in their own subject areas. The government has continued to invest in the infrastructural set up within schools, the laptops for teachers, ceiling mounted projectors and interactive whiteboards will all require updating, maintaining and managing, all to be done by ICT coordinators who most likely will continue to not have hours allocated to the post. Supporting this growing infrastructure is a pressing need that the government must address.

Recent OECD (2009) findings on literacy show that Ireland has fallen from fifth place to 17th, the most dramatic drop of any OECD state, so despite vast investment in ICT it seems that students are seeing little benefit. This is not a revolutionary finding, this issue was flagged back as far as 1999, speaking about the investment in ICT in Irish schools Trench (1999) notes that if educational priorities are not clearly established;

It is possible that a great deal of money could be spent without any measurable or significant gains to the quality of education. (p. 112)
In a Norwegian context, Krumsvik (2006) concludes that contemporary public and political support for ICT implementation schools has not been matched by educational results.

**6.3 Recommendations**

The recommendations from this study are based on analysis of both sections of the findings presented in this study and the literature reviewed that shaped the initial questionnaire, which was Section 1 of this study.

1. The time allocated to coordinators within schools to address ICT issues is of growing concern and has been highlighted in this research. With most coordinators operating within the role on goodwill alone, a re-examination of the time allowed to coordinators is essential.

2. The drafting of a new policy document that will guide and assist schools in attempts to integrate ICT into schools. The document, like all good plans should allow for input from teachers, ICT coordinators and management, so that when the document is made available to schools the content will have a much greater impact and possess a realistic chance of being implemented.

3. In light of the data analysed from the questionnaire and interviews, coordinators suggested that they now for the most part had the infrastructural set up that could enable ICT integration; however they were unsure how to now go about integrating ICT. Again from analysis this study would recommend that the Department of Education provide all those working with ICT in Education with a vision, a
positive vision that shows clearly how ICT can benefit teaching and learning, and where ICT and Education can be in 10 years from now.

4. This study was carried out in the year preceding new government spending on ICT in schools, this recent spending equipped each teacher with a laptop and school classrooms with projectors and interactive whiteboards. This researcher reported in the literature review that simply providing the infrastructure is not enough hence a very worthwhile piece of research would be to allow the new infrastructure and resources time in schools. After a year or two to then investigate what impact these technological innovations in isolation have had on teaching and learning.

5. This study highlighted the lack of collaboration between schools in the area of ICT, though many of the coordinators that participated in the interviews could see obvious advantages. Therefore another possible study could involve taking 12 schools in a region, allow six to develop ICT in the ad hoc manner that is current practice (the placebo), and take the other six schools and work with the teachers, coordinator and management in all six schools. These schools would collaborate in an open manner sharing resources and experiences, it would include focus groups and these schools would also be provided with a policy document and a vision of how and where ICT can take teaching and learning. After a period of time investigate the disparity and diversity between the two groups of schools to show how ICT has integrated, developed and supported teaching and learning in the different groups of schools.
6.4 Endnote

In March 2011 in Ireland a general election took place, the result was a Fine Gael and Labour coalition. The new Taoiseach announced the new cabinet and a new Minister for Education and Skills. The new minister however like all other mere mortals brings with him preconceived ideas about education, more particularly about schools and even more particularly about ICT in schools.

Although this country is currently consumed by the banking crisis, it is the opinion of this researcher that ICT in Education is also in crisis. A key question for the new minister is how much longer will ICT coordinators continue to do the work out of goodwill alone? The choices the Minister makes in the coming months and years in office will determine if in 10 years time another researcher takes on the project of examining the role of coordinators in schools and whether or not their findings will replicate the findings of this study? With the correct choices from the new Minister, in 10 years time a researcher could be investigating the pedagogical beliefs and influences of the E-learning coordinator in ICT in post-primary schools.

The government must abandon pushing the old positive rhetoric about ICT in Education, remove the blinkers, face reality head on and realise that without policy documentation, continuing professional development and a vision of where ICT and Education will be in 10 years, no amount of spending on resources will change how ICT is used in schools. The final word from this study is to unfortunately agree with Cuban’s (1999) comments regarding classroom use of ICT as being ‘uneven, slow, and of decidedly mixed variety’, this study finds that this continues to be the case in 2011.

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Appendix 1

ICT Coordinator Questionnaire

The aim of this questionnaire is to gain information about the role of the ICT coordinator. Using this questionnaire I hope to gain a better understanding, of your background, your level of IT knowledge and the level of pedagogical support you offer. This questionnaire should take no longer than 10 minutes to complete. All information submitted will be strictly confidential and no individual will be identified in this research study. I would like to thank you in advance for taking the time to complete it.

Adrian McDonagh

1. Sex: Male ❑ Female ❑

2. Age: 21-30yrs ❑ 31-40yrs ❑ 41-50yrs ❑ over 50yrs ❑

3. How many years of teaching experience do you have:

    0-5yrs ❑ 5-10yrs ❑ 10-15yrs ❑ over 15yrs ❑

4. How long have you been the schools ICT coordinator?

    0-5yrs ❑ 5-10yrs ❑ 10-15yrs ❑ over 15yrs ❑

5. Is the role of ICT Coordinator a post of responsibility within your school? Yes ❑ No ❑
6. Approximately how many students currently attend your school?

7. Approximately how many student computers are currently in your school?

8. How would you currently rate the standard of the ICT equipment in your school?

   - Very good
   - Good
   - Adequate
   - Poor
   - Very poor

9. How many classrooms in your school currently have a computer installed? (excluding computer labs)

   - 0-5 rooms
   - 5-10 rooms
   - 10-15 rooms
   - Over 15 rooms

10. How many classrooms in your school currently have access to the internet?

    - 0-5 rooms
    - 5-10 rooms
    - 10-15 rooms
    - Over 15 rooms

11. How many classrooms in your school are currently networked?

    - 0-5 rooms
    - 5-10 rooms
    - 10-15 rooms
    - Over 15 rooms

12. Does your school have a written ICT plan/policy

    - Yes
    - No
If yes, please indicate by ticking a box, which if any of the following were involved in the drafting of the ICT plan/policy:

ICT Committee ❑      ICT Coordinator ❑      School Management ❑

Board of Management ❑      Teaching Staff ❑

13. How many hours a week are allocated to you for your role as ICT Coordinator?

14. How would you rate your level of technical knowledge and skills in the following areas?

Computer networking: Very good ❑      good ❑      adequate ❑      poor ❑      Very poor ❑

Computer Repair (Software): Very good ❑      good ❑      adequate ❑      poor ❑      Very poor ❑

Computer Repair (Hardware): Very good ❑      good ❑      adequate ❑      poor ❑      Very poor ❑

Repairing printer problems: Very good ❑      good ❑      adequate ❑      poor ❑      Very poor ❑

Maintaining the network: Very good ❑      good ❑      adequate ❑      poor ❑      Very poor ❑

Audio Visual Equipment: Very good ❑      good ❑      adequate ❑      poor ❑      Very poor ❑

(TV and Video)
15. Which of the following duties reflect your work as an IT Coordinator? (Please tick the boxes that apply)

Promoting ICT usage among staff
Purchasing ICT equipment
Maintaining ICT equipment
Repairing ICT equipment
Training staff in the use of ICT
Devising ICT plans and policies
Monitoring ICT use
Helping teachers acquire ICT resources
Providing teachers with examples of good practice

16. In order of priority rank the 3 most important duties, in your opinion, you provide as ICT Coordinator (the list in Q.15 can be used for reference)

1. 
2. 
3. 

17. In order of priority rank the 3 duties that demand most of your time as ICT Coordinator (the list in Q.15 can be used for reference)

1. 
2. 
3.
18. Approximately how many teachers are currently in your school?

19. Approximately how many teachers in your school use ICT in the classroom?

- 0-5 teachers □
- 5-10 teachers □
- 10-15 teachers □
- over 15 teachers □

20. How frequently do teachers contact you for help in using ICT in their teaching?

- A few times a day □
- Daily □
- Every other day □
- Weekly □
- Never □

21. How would you describe, in general, the teaching staff’s attitude to integrating ICT into their classroom teaching?

- Very Positive □
- Positive □
- Neutral □
- Negative □
- Very Negative □

22. Have you introduced initiatives to encourage teachers to use ICT in their teaching? If so, what were they?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
23. Other than maintenance, what ICT issues is a teacher most likely to contact you about?


24. Of the teachers that use ICT in the classroom, please rank numerically with 1 being the most used, to 7 being the least used, to indicate how ICT is being used.

Word Processing

Presentations

Interactive Whiteboards

Internet Searches

Video / DVD playback

Dedicated use of Software (i.e. Solidworks)

Project Work

Other

If other, please specify


25. Do you feel you have the necessary skills and knowledge to allow you to perform your role as ICT coordinator?

Yes ☐ No ☐

If no please briefly describe, in your opinion what form of professional development would be most beneficial to you?

________________________________________________________________________

________________________________________________________________________

26. How many ICT courses have you attended to date?

0-2 courses ☐ 2-4 courses ☐ 4-6 courses ☐ over 6 courses ☐

27. How would you rate the content and relevance of these courses?

Very good ☐ good ☐ adequate ☐ poor ☐ Very poor ☐

28. What is the single biggest challenge you face as ICT coordinator? Please explain your answer.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Appendix 2

Opening Questions:

Can you tell us about your educational career to date? (teaching experience, subjects taught)

Can you tell us how you became the schools ICT coordinator and what skills you personally had that enabled you to carry out the duties of the post?

Present the Findings from Section 1: These questions are validating and probing further the findings of the quantitative questionnaire.

My survey showed that almost 40% of ICT coordinators felt they didn’t have the necessary skills and knowledge to perform their role. What ICT training have you completed, before and since becoming the ICT coordinator? Has this training been effective and can you explain why (yes or no)

What if any external support do you receive (is available to you) as the schools ICT coordinator.

My research has shown that in only 40% of the schools surveyed is the post of ICT coordinator a post of responsibility and also that over 66% have no hours allocated to do the work, with these facts in mind, can you tell me, what is the status of the post within your school.

My research has shown that only half of the ICT coordinators surveyed provided training to teaching staff in the use of ICT, but over 90% maintained ICT equipment, do you provide training to staff?, do you think that this should be part of the role of the schools ICT coordinator. If you provide training, what is the nature of this training?
83% of coordinators surveyed said that the teaching staff’s attitude to integrating ICT into their classroom teaching was positive too very positive, how is this evident, and how does this manifest itself on a day to day level.

78% of coordinators surveyed felt that they had good or very good ICT equipment in their school; in the past equipment reliability was considered a strong factor in teacher’s reluctance to use ICT in their teaching. So we have the equipment and the teachers are enthusiastic, so why isn’t it being used? (Why is ICT integration in schools still viewed as failing?)

With 78% of those surveyed agreeing that the schools had a written ICT plan/policy, can I ask you, do you think the plan is taken seriously within the school, does everyone know about it and its contents.

**New Questions:**

Do you currently observe the use of ICT in the classroom? Do you see this as being part of your role as ICT coordinator? In your opinion, should it be part of the role? Why?

Without ongoing monitoring of the teachers use of ICT in the classroom, how can you be sure that the use of ICT is evolving or even contributing to teaching and learning?

So how do you fix problems outside of your technical expertise? (Internet searches for fixes, forums, help lines)

What models of technical support are in place within you school?
Do you think this model is adequate, could you suggest and alternative?

Are there any teachers still opposed to ICT use? What is the nature of this opposition and does this affect the rest of the staff.

In your school how does ICT contribute to effective teaching and learning?

What is your interpretation/understanding of innovative use of ICT in the classroom?

Closing Questions:

Do you currently collaborate with any other schools in relation to ICT issues?

Is it something you would consider/ could do to help with the integration of ICT into the classroom?

And finally, overall, do you believe ICT integration has been successful in your school? Why?
Title of the study: Examining the role of the ICT coordinator in providing technical and pedagogical ICT support in Irish post-primary schools.

Dear ICT Coordinator,

I am pursuing a Masters in Education through research. This research aims to explore the use of ICT in post-primary schools and identify the impact this use has on the ICT support services within the school. In order to examine this, the research aims to examine the role of the ICT coordinator, investigate the current models of technical support and identify the factors that contribute to successful educational use of the technology in schools.

The Principal of your school has consented to conducting this research in your school. Post-primary schools in the Limerick/Clare/North Tipperary region will be purposefully selected to get a range of school types for the study. In each school the ICT coordinator will be asked to complete a questionnaire and in a randomly selected number of schools the ICT coordinator will be invited to participate in a one-to-one semi-structured interview.
The research aims to provide a series of recommendations for schools to enhance their provision of ICT support. These findings will be distributed to all participating research schools on completion of the study.

Participation in this study is voluntary, and the information gathered will be treated with the utmost confidence and anonymity. All data gathered will be analysed, and then destroyed to protect the identity of participants. The results of this research study will be reported in my thesis and other publications. It may also be disseminated at education conferences.

If at any time you wish to withdraw from this research you may do so. Should you have any further queries or require information on the topic, feel free to contact me or my supervisor.

The University is subject to the Freedom of Information Act and the research will adhere to the provisions of Data Protection legislation.

Name: ___________________________ Name: ___________________________
Adrian McDonagh  Dr Oliver McGarr
Date    Date
Email: adrian.mcdonagh@ul.ie    Email: oliver.mcgarr@ul.ie
Phone 061-202899        Phone 061-202934

If you have any concerns about this study please contact:

Chairman Education and Health Sciences Research Ethics Committee

University of Limerick

Tel (061) 234101
Appendix 4

University of Limerick
OLLSCOIL LUIMNIGH

ICT Coordinator Consent Form

**Title of the study:** Examining the role of the ICT coordinator in providing technical and pedagogical ICT support in Irish post-primary schools.

I have read and understood the research information leaflet in detail and understand the particulars of the research project.

I understand that my identity will not be revealed at any stage in reporting this research and all information will be treated in the strictest of confidence.

I know that my participation is voluntary and that I can withdraw from the project at any stage without having to give a reason.

I hereby give my consent to participate in the research for the above study.
SIGNED: ____________________________

DATE: ____________________________
Appendix 5

University of Limerick

OLLSCOIL LUIMNIGH

Principal Consent Form

**Title of the study:** Examining the role of the ICT coordinator in providing technical and pedagogical ICT support in Irish post-primary schools.

I have read and understood the research information leaflet in detail and understand the particulars of the research project.

I am aware of the procedures involving my school, and of any risks and benefits associated with this study.

I understand that the schools’ identity will not be revealed at any stage in reporting this research and all information will be treated in the strictest of confidence.

I know that the schools’ participation is voluntary and that we can withdraw from the project at any stage without having to give a reason.
I hereby give my consent to participate in the research for the above study.

SIGNED: ____________________________

DATE: ____________________________

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Appendix 6

Researcher: First of all can I start by saying thank you for agreeing to see me and allow me to interview you.

Coordinator2: No problem

Researcher: If we start perhaps, could we start perhaps by you telling us a bit about your educational career to date.

Coordinator2: Am, did am a BCOMM in Cork, a Commerce degree in Cork and then did the Dip in Cork a higher diploma in Education in Cork as well and am did ah a Grad Dip in Computers in UL and ah did a Grad Dip in Career Guidance in UL as well, that’s where I am at right now.

Researcher: Ok, its career guidance.

Coordinator2: I’m a career guidance teacher now, I used to teach, ah economics, business and accounting for about 22 years and then ah 8 - 10 years ago switched, did a course outside in UL, 2 years part-time and ah came back in here then as Guidance Counsellor.

Researcher: Ok and how did you become the schools ICT coordinator.

Coordinator2: I always had an interest in computers going back Id say 30, 32 years I suppose, the first teaching job I had was in Enniscorthy I was in charge of computing, and programming at that stage, computer programming so am, am, that’s how it started really always had an interest really.
Researcher: Ok, ok, I am just going to go over some of the findings from the questionnaires that I have got back to date, it showed that almost 40% of ICT coordinators felt they didn’t have the necessary skills and knowledge to perform their role, I am just wondering about what training you had prior to becoming the coordinator and what training you have had since.

Coordinator2: Little now, ah lot was self learned, am I would be kind of be in a position that most things involving software I would be able to deal with, I’m not 100% up to speed with regard the network itself, am, but its on a need to know basis that I would actually find out something, if I need to find out something, I would go on the net to find out, I would know how to do that. Or I would phone, a colleague, an external colleague, am, and ah, he would tell me what to do, so then I would try to write down what he told me to do, because the same thing, same issues keep on coming up.

Researcher: I suppose they do, am, and since becoming coordinator have you been on training courses.

Coordinator2: I would have done short courses, am, where would the last I did, up in Limerick Senior College, I did a course there, something to do with networking; I would have done, attended a number of courses outside in the Education Centre, but am a lot of it would be self learned, self learned. I can understand, for instance that a lot of coordinators would not have the background that I would have. Also I taught, we had a pilot programme here in the school for Computers, Computer Science, it ran for 20 years, and it was overseen by Eamonn O’Quaid outside in UL, Professor Eamonn O’Quaid. That acted as an alternative leaving cert subject that got you access to LIT and UL, it acted as full points for that. So a colleague of mine and myself, Michael Fitzgerald, he is a principal in Limerick Senior College, was, again due to interest that we ran it, we set the exams, but then it got out of control really in so far as too many schools wanted to get on the band wagon.

Researcher: Ok
Coordinator2: And am there was no finance coming from anybody, it was totally voluntary so I pulled out of it when I started the Guidance actually. I'm not sure if still going or not. We don't do it here in the school.

Researcher: Ok and what about in-service days have you.

Coordinator2: In service days, am not particularly for computing no

Researcher: You mentioned there before phoning an external colleague, I am just wondering about external support, what external support you use.

Coordinator2: He is a guy where if I come up against an issue that I couldn’t deal with, we could call him in. He is paid per visit there, which is quite high enough. There are certain areas like I mean, Facility now is a core element of the administration of the school, it’s a package there. Now I could learn that, I know a certain bits about it, it goes too deep for me. I just don’t want to know about it, I don’t have the time. So we pull in this guy a specialist from outside to deal with that.

Researcher: Ok, it’s probably more efficient is it, to deal with it in that way.

Coordinator2: Well he would know, because he would be dealing with that problem everyday, even say to do timetabling, I just don’t want to go down that road. I know I could do it but I don’t want to go down that road because it will just come on me. Right now I am in charge of the website; we developed a new website there.

Researcher: Yes that’s right you showed me it the last day.
Coordinator2: But again, I will oversee it, but I don’t want to have the mundane task of uploading information everyday I make sure that if it breaks down I can deal with it, I can fix it, but that’s going to cause, issues, problems down the road. I mean a job like that people don’t understand how much work is involved in it. To keep a web site up to date.

Researcher: Yes

Coordinator2: I mean you are talking about everyday there is something is going up there you know, and it takes you a half an hour to put up something there properly.

Researcher: Ya and that actually bring me on, to 66% of coordinators that I surveyed had no hours allocated to the post and in 40% the post was not a post of responsibility. I am just wondering what the status of the post within the school.

Coordinator2: Oh be mad, that’s an absolute madness, I mean I don’t know how anybody. Its core, it’s absolutely core in this school. Because I mean in administration, that’s the main, I mean that’s critical data on that, so that can’t go down, that’s really, you need a coordinator, unless a principal was up to speed and they could handle it. Invariably they wouldn’t, they wouldn’t have a clue about it. I mean the idea of IT not being, am, not being a post of responsibility, I just can’t understand that, I can’t understand that. There are fools actually, there, in schools doing that for nothing. The amount of time it takes, and the amount of effort it takes.

Researcher: Yes, I mean I was quite surprised, I mean is it as high as 66%.

Coordinator2: They are mad. In this school here we have 150 machines, 150 desktops, and they have to be, they break down ever so often you would have a number of hubs around the place we would have a number of switches, we would have maybe 40 or 50 switches. They go down; like kids are always messing with them, in so far as pulling wires out, shorting them, the system goes down then.
doesn’t go down often, I mean the last time it went down was maybe November, I think we had difficulty with it there, it took us a while to trace it, but what happened was a kid in a room, there was two sockets and they took the wire from one and put it back into the other, and it looped mad for a while but now we know what to look for.

Researcher: Ok

Coordinator2: Sorry now but anybody, IT in this place now, usually I think IT and AV audio visual, here we split it, there is no may in the world I would have actually done that, because I know how much work I needed to do in it. Audio Visual now it involves LCD projectors and stuff like that, we just split them, so that if they break down someone won’t be breaking down my door coming into me.

Researcher: Ok

Coordinator2: The downside of this thing here is that, I am a Guidance Counsellor and if I am here with a client, ok, somebody’s thing doesn’t work you know knock at the door and they insist that’s vicious stuff, vicious stuff. Sometimes that really throws me off, especially dealing with a client in a very confidential area, I don’t like that, I don’t like that.

Researcher: I can imagine that being difficult; that you re in with a client and somebody comes along.

Coordinator2: No matter what, or I mean when I teach a class, I teach a class as well. This morning, had one now for instance, class started at 9.05 and at 9.20 knock at the door, instant gratification, come and fix it, I wasn’t able to fix it actually, I’m not sure I must deal with it later on today but I mean you know.
Researcher: The expectation is huge.

Coordinator2: Huge, Jesus absolutely, absolutely. The worst one now I'm finding is, ah, laptops. Teachers having laptops, and the laptop goes down.

Researcher: There own.

Coordinator2: There own ya, they were actually, actually they were granted by the school, but the condition was that they would look after them and if they break down, but every day I have somebody coming in with a laptop, its too slow, its going too slow, there's a virus on it and you know, and that isn't my job and yet I don't have the nerve to say feck off like, that isn't my job, you know, I would still do it and its eating into my main job which is Guidance Counselling, you know that's my main job.

Researcher: That kind of brings me on again to another area around; training teaching staff in the use of ICT do you provide training and if you do what kind of training and if you don't do you feel that you should, or do you feel that is should be encompassed within the role I suppose.

Coordinator2: No, coming on stream right now is the 100Mbit project, 77 schools where we are going to get 100 Mbps, ok. Now again because of the work load I have here we have actually employed somebody a member of the staff and given him a contract for 3 years to implement that, so he has taken that on board totally, to drive it, you need somebody to drive it. So he is in the process of now of organising training, and he is very professional, knows exactly what he is doing. He got an audit of the different skills different people have and what they want and broken them down into five different categories, from people who are well able to it, down to people who couldn't even switch on the machine and we are in that process at present. Now I will be delivering some of the courses there, address each of
these, to the very specific problems people have or specific desires in terms of IT so as to enable them to deliver classes better in the classroom

**Researcher:** And it sounds very good the way you have put them into groups.

**Coordinator2:** Groups yeah

**Researcher:** Like the power users, you are not going to be boring them with the mundane simple stuff and the beginner if you wish not to fast.

**Coordinator2:** The problem I have with it, with IT, I am a great fan of IT, very much au fait. I'm always scared that teachers will take the easy way out and think that IT is going to be the answer to all their problems and it isn’t. There was a fantastic article actually 3 weeks ago, and I don’t have it here with me, in the Business Post, about that, a brilliant article a short article. About the fact that computers in the schools they have there place but be very wary of it. I would fully understand that ok, I would fully understand that. I can see for instance that teachers will go in without lack of preparation, without, without having learning outcomes defined and that is the big area of training for teachers its like going back to maybe 10 or 15 years ago when you went in with a DVD or a video and showed them without actually planning the class, and ending up at the end of it I mean what were the outcomes of the hole thing, you know class starts the press the button and when the class finishes end, no learning taking place there, absolutely none what so ever.

I have the same problem over this thing here, you know, you want a break, ah take them down to the computer room, you know without a planned learning schedule. It happens sometimes now not all the time, but I would be annoyed with that. Invariably what happens there is damage will be done to machines because of boredom as well you know and damage will be like people taking off the keyboard,
the keys off the keyboard and switching them around you know what I mean, because they are bored in class, and that is coming back to it.

**Researcher:** Yeah, yeah.

**Coordinator2:** But we have a big, a massive programme, the man is getting reduced hours and also getting payment, so this is really cutting edge stuff. We have already had 3 half days of in service to do with that, we have one again this Thursday. So I am very positive with regard to it, there would be no excuse really.

**Researcher:** Well it sounds like the role, that IT will play in teaching and learning is taken very, very seriously within the school.

**Coordinator2:** Very much so.

**Researcher:** At every level I think from teaching staff up

**Coordinator2:** Yes, yes. We are now in the process of putting in 14 interactive white boards ah like every room in the school will have an LCD projector. Every room will have a computer either a laptop or a desktop but we are in the process at present now, this summer we will be putting in 14 interactive whiteboards, but there is massive. Again now I would have issues with that myself, because you know, you need to be trained to use those, and there will be training given but a lot of people think that ah again its going to alleviate problems and it isn't necessarily. We have a guy here now he's fantastic absolutely brilliant with them, the interactive white board, the same guy now doing the broadband programme. So he is going to take it on board to train people, so if he puts it into the Science lab he will train them how to upload.
**Researcher:** Yeah, I think the interactive whiteboard are very useful as a teaching aid, am, but without the software they won't be interactive, from a teaching and learning perspective, in sciences and geography there is software available.

**Coordinator2:** That's it, that it. Only a few areas use it.

**Researcher:** It's not across the curriculum, yet.

**Coordinator2:** No, no so we are ahead of our time there I think, I think the usage of those now, of those boards won't as much as we think it will be.

**Researcher:** No initially, but Id say going forward if you have the infrastructure in place at least you will be in a position to use it.

**Coordinator2:** Yeah I should get a hold of that article, I would photocopy and give it too you, I would be very pro IT and all that in the classroom but I think the guy hit it, there is no substitute, absolutely zero substitute for the presence of a teacher in the class.

**Researcher:** Absolutely

**Coordinator2:** None, and the presence of a good teacher, like you have teachers in the class and they have no presence, you know you have teachers in the class when they have no presence, but they, a good teacher in the class, and they can use that, but only like as an aid, like chalk, like coloured chalk, that is what it is, that's what it is. The only difference there is a certain amount of training is you have to able to use it.
**Researcher**: Actually, now it might not be the case now in this school, but, in the past teachers used a poor infrastructure and the poor reliability of the computers for not integrating ICT in their teaching.

**Coordinator2**: Yes

**Researcher**: Am, we have more or less sorted that out, I mean I have been quite surprised that everybody have rated the equipment in the schools as either good or very good.

**Coordinator2**: Yeah.

**Researcher**: And the teacher’s attitude, it seems is quite positive in general, am, but ICT is still viewed as failing in the wider picture, I am just wondering why do you think it is viewed like that.

**Coordinator2**: It's failing because of raw materials, the actual am, well, lessons, lessons up on the net, lessons, if I have a lesson there, if I have a good, well presented lesson. I think that is where development, a lot of jobs could come in down the road, is where lessons to be delivered in class, could be done on PowerPoint, integrating say video audio, movies. You can do that, you can do that and that can supplement what the teacher is there, but it still can’t be the only thing. I think the major draw back is, because here in the school now we have somebody in science, science are good heavy users of it, and they would be kind of mature people, they would use it very intelligently, very, very, very, good. Geography is another place that would use it as well.

**Researcher**: Just moving on there, 78% of the schools had a written ICT plan, policy.
Coordinator2: Yeah, we would have one, yeah.

Researcher: Is the plan taken seriously.

Coordinator2: It is, ah, it’s an ongoing, it almost automatic, it would be, it would be, yeah.

Researcher: All the staff would be aware of it and its contents.

Coordinator2: They would be yeah, yeah. We had a whole school evaluation last year, and it was commended several times, you can find it on the net there. ICT and use of ICT across the curriculum in terms of remedial, the special needs and stuff like that the sciences, different, you might look up that, it was good positive stuff there.

Researcher: Yeah, yeah, just looking at the training around, of the teaching staff in the use of ICT.

Coordinator2: Yeah.

Researcher: Does anyone currently observe the use of ICT in the classroom, what I mean is without ongoing monitoring; when you are looking at training certain teachers, am, without ongoing monitoring how could you be sure that there is effective use of ICT.

Coordinator2: No, no there is none, and, sorry I'm not sure how you would actually do that, because teachers would feel uncomfortable I'd say if there was somebody inspecting their class.
**Researcher:** Yes. That’s how they would feel like; I imagine that’s how they would feel.

**Coordinator2:** I think that would be the case, but am, like, sorry. I wouldn’t have an issue with it. I deliver guidance to transition years and I deliver it all through the internet, all of it, every bit of it. I have plans with it going in and taking it through. I wouldn’t have an issue with regard to that. Am, you see you wouldn’t have ICT, say in a 40 minute class, in a regular class, even a science or geography, you wouldn’t have ICT in operation for 40 minutes there.

**Researcher:** It wouldn’t be effective use you did, really, you wouldn’t be using it as an aid, then, it would be taking over.

**Coordinator2:** Taking over, but you wouldn’t, it would only be as ah, as every so often, so how would you monitor that. I understand what you are saying, I understand the thing and of course you must check out the monitoring, the monitoring, you must monitor it to find out, hang on a second, is all this money being wasted, true, I fully agree, fully agree.

**Researcher:** Yes

**Coordinator2:** There is an assumption made there.

**Researcher:** There is an assumption, and I suppose is the best way around it to equip the teachers as best you can by providing some form of training to them.

**Coordinator2:** Yeah, yeah. I have a personal view on it right now, that the amount of money being spent on ICT it could be better spent some place else, I have a belief, that in the times we are at that money could be better spent some place else.
Coordinator2: In employing extra teachers to reduce class sizes will have better, will have a greater outcome than having say computers in rooms where they are underutilised. I'd say across the board, except with transition years, utilisation by other classes is low enough, is low enough, and now that would be a general, I would believe that myself. Transition years now would have a heavy exposure alright. Heavy exposure through either the ECDL am, or am in my case delivering say, transition year is probably the heaviest users of it, the heaviest users of it. And again because that won't interfere, I can understand that because say in 1st, 2nd, 3rd or 5th or 6th year it interferes with the curriculum that had to be covered, and say if you are spending one class or two class doing something like that then you fall behind, you won't cover it as fast, you won't cover it as fast. You might cover it better, understand it better, they might understand it better, but teachers would be uneasy, I have got to get this done, it would. The other thing of course some kids just get turned off it, you know we think the ICT the way it is, PowerPoint, like how many more PowerPoint presentation do we have like in this thing here.

Researcher: Ok, yeah, good point.

Coordinator2: That if you have say 4 classes in a row and they are all 4 PowerPoint presentations, they lose it, they lose it.

Researcher: They do.

Coordinator2: And how do you coordinator that is another thing, you are going to use PowerPoint today and I will use it tomorrow, it's not on like. I don't know.

Researcher: I suppose it's what is within the PowerPoint presentation perhaps.
Coordinator2: To a large extent yeah.

Researcher: I mean if you are using it.

Coordinator2: Just with words there.

Researcher: With words it may just as well be an overhead.

Coordinator2: Yeah, it true, it’s just and alternative to an overhead, so video I suppose would be a good one there, but not too much if it still, you know.

Researcher: Again, yeah, if you have too much of it, if it’s on too long.

Coordinator2: Putting a class into, now a number of teachers there would have software, ah, question mark design, they have developed it their own software, and right now we are putting up to Moodle. There is a lot of the stuff, that part of the planning we have right now, is that if you develop something you put it up onto Moodle for internal use only. So we are having issues with regard to that, so maybe one person would always be doing it, and everyone else would be ripping them off, you know.

Researcher: Yes

Coordinator2: There is something like, we have had it in the past, one teacher now is brilliant at actually developing, am, new class ware, and then everyone says thank you very much, and sitting back, and that can be very frustrating. But Moodle is going to be our, what do you call it, our virtual learning.
Researcher: Yeah

Coordinator2: VLE, isn't it, we are going to be using that here and some of the training over the next couple of weeks is going to be in that.

Researcher: Ok

Coordinator2: We have a lot of training actually at night time, through the adult ed. and a lot of people have gone onto that, they do typing, basic stuff, word processing, they have done the ECDL by night time, they have done Photoshop, they used that, web design they have done that, they are run by adult ed. here in the school so people go on that and they go free. There is no, there is no, problem really, actually, in our school here there isn't a problem, if I want to do a course tomorrow morning in something, the money is there, absolutely free, totally.

Researcher: Ok

Coordinator2: So it is maybe getting persons to set aside the time to do that.

Researcher: Just slightly going back there I suppose to the teacher training, have any of the teachers opposed or voiced their concerns about doing it, or don't want to do it, they are opposing the use of ICT.

Coordinator2: Ah we have one, sorry, there is one area now which is the Facility, which is the role call, its and an administrative package, did you ever come across it, it's quite sophisticated (Tape paused to look at the package with Coordinator2)

Researcher: Does that resistance or opposition affect any of the rest of the staff.
Coordinator2: Ah there is resistance by some, but fewer and fewer. Younger teachers coming in now would be very au fait with it, very au fait with technology, they wouldn’t have a problem with it. Some of the older ones, but they have resistance to a lot of things, not necessarily ICT.

Researcher: Just wondering how would you fix problems outside of your technical expertise.

Coordinator2: Call in somebody from outside.

Researcher: Ok and the models of technical support that are in place are they effective.

Coordinator2: Are they effective.

Researcher: Or are they adequate and could you suggest and alternative.

Coordinator2: For me they are, for me they are. Yeah, centralised, I would love to see all of the technical support centralised. Somebody like the Department of Education set up a technical support, like they have for the NCTE there if the internet goes down, if the internet goes down, so if there was a core area that would deal with more general items, they would only deal with say problems with the internet, if they (NCTE) can find a signal going through to the router that’s their bit finished. I think you could make, be a very efficient use of scarce resources, say if you had 10 or 15 people, in a central area, that were specifically going to answer questions, problems that IT people in schools could actually phone up, for free, and talk you through it or better still.

Researcher: A helpline
Coordinator2: Well that, but if they could actually get control of your machine from where they were, central control, log in, because the guy we have now does that a number of times, that if I have a problem with my machine there he can log in.

Researcher: Yeah, remote access.

Coordinator2: Remote access, that is, that would be an extremely efficient use of resources, because there is no, like if you ask me, right now where we are at, is there a need for a fulltime IT professional, now it would be great to have one, but I don’t think there is.

Researcher: What about a fulltime IT professional within a community of schools within let’s say the Limerick city area.

Coordinator2: Yeah, yeah, one for five a great idea, a great idea. I take in somebody there from Limerick Senior College who is on work experience there from IT, one day a week, Monday, and I can show them how to do something. Now I have gotten a number of Russians and Polish over the last maybe two years who are very good, they know a lot like, but we have a 140-150 machines a lot of work to be done there, so I can say, this is what you do, and they go away and do it, it works out very well.

Researcher: Ok

Coordinator2: Works out really well, but if we had IT support for one day a week, ok, that would be brilliant, that would be the ideal scenario, one day a week, that's all, because you could put up with something for a week, and they come in the lets say the following Monday and they fix whatever is there, you know.
Researcher: Ok, ok and they come in on the Monday regardless, so it could be an element of preventative.

Coordinator2: Yes, that would be quite and efficient use of the thing. The other alternative I suppose is the way the thing is going, cloud computing and all that, that all the software is up there.

Researcher: And it’s all flash.

Coordinator2: Yeah

Researcher: It is, it has gone that way to some extent in the states. Just on that, do you currently collaborate with any other schools around ICT?

Coordinator2: Not now, no I used to before when I was involved in the Computer Science subject we had in he school, I used to but not anymore no.

Researcher: Ok, and in you school, how does ICT contribute to effective teaching and learning.

Coordinator2: It depends on how well you use it; it can be in a bad way or a good way, depending on the teacher, depending on the motivation of the teacher. Some teachers I know, make absolutely fantastic use of it, others use it as a crutch, to me it isn’t, but that's a different issue really, that isn't the ICT that’s the problems there, if they had a video they would have the same problem with it.
Researcher: Yeah, yeah. One thing actually, the word or phrase innovative use of ICT is used, banded about quite a lot, what would be your interpretation or understanding of innovative use.

Coordinator2: Innovative use, I suppose in the technical area, CNC lathes, control of CNC lathes, its innovative, I know it’s out there already, a good bit of it in the remedial area, special needs area, very innovative and teaching Irish, there is a guy now who is tops now I think he is brilliant at it actually, in Irish and Irish is a difficult subject if you don’t like it, this guy has cracked it, this is the guy again that is delivering the 100Mbps training. So that’s the reason why we picked him, because if anybody is going to drive, he is the guy who is going to drive it. But I can see the 100Mbps going into schools there and it’s not going to be utilised at all, now, we made a decision, hang on now we would be mad not to use that. We will probably going to use video conferencing a bit.

Researcher: Ok

Coordinator2: Between the other Jesuit schools, we are probably going to use that. We also probably, I think there might be a place for it, for the Department of Education in terms of delivering certain subjects, this year now we have difficulty running a class, like TG technical graphics in one of the lines there, because the numbers weren’t there, but you might have another class say in Castletroy that had a similar problem, they couldn’t run it. You might have one teacher then, with the two classes together, delivering it over the net.

Researcher: Yes

Coordinator2: That would be the way, that would be a very innovative way of using it, so you would have one teacher, then he could rotate between the different places. Or he could do three places it wouldn’t make a difference. You could still
have the subject being there, being offered but then the one teacher would be dealing with the three places.

**Researcher**: There wouldn’t be the teacher’s presence in the classroom though.

**Coordinator2**: There wouldn’t be the teacher but you could have supervision for that period of time, you know you could have supervision there. Or, I understand what you are saying, but you could have a non teaching person controlling the class there.

**Researcher**: True, true

**Coordinator2**: Or that could be delivered at home even, be delivered at home.

**Researcher**: Well I suppose it opens up all avenues.

**Coordinator2**: It does yeah.

**Researcher**: If it’s online, and broadband is available.

**Coordinator2**: Speed, speed, I can the use of speed alright. I can see a big issue coming down the road, security, for the 100Mbps broadband because they are going to open now the likes of YouTube and stuff like that. Jesus there are legal things there and there will be court cases down the road very, very fast there. Where there is an unsupervised class, decide they are on the internet and a few guys are having a laugh at what they are seeing, but then somebody else sitting beside them says, hang on a second, go home and tell the mother, and the mother and father will sue the schools because we didn’t provide a safe place for them, happened before, didn’t happen here, happened before, I can see massive issues there.
Researcher: Yeah.

Coordinator2: I think teachers would want to be made aware of the policy, update our policy, you know, acceptable usage policy.

Researcher: Yeah and you would have the option to block, are you being encouraged to open up YouTube.

Coordinator2: Well it’s going to be handed back down to the individual school. See YouTube is a fantastic learning tool.

Researcher: It is a fantastic tool.

Coordinator2: Oh Jesus, it’s absolutely brilliant altogether.

Researcher: Yeah.

Coordinator2: Because I would have issues like again, you asked me a question, if a problem comes up with me and computers, ok, if I can phrase my question correctly on YouTube or on Google I will get the answer after a short period of time. If I can phrase it, I would be comfortable about it, I would take action on it. You know I have come up with several situations like that. The other problem I would have is I forget. I learn something, for instance Id learn that today how to do it, next week it comes up again, I'm not using it every day. But I am comfortable on the likes of YouTube or Google.

Researcher: Yes, the other thing is, what I have found is that the role of ICT coordinator isn’t actually defined, in so far as, it’s difficult to find or impossible to find
a black and white document from the Department, that states, what the role of the ICT coordinator within a school is, and I am just wondering what do you see as your role.

**Coordinator2**: Making sure that the 150 machines are working, making sure that proper software on them, all licensed, that’s my role. Present a report to the Board of Management at the end of every year on how thing are going, which way it should go in the future. To set objectives, set objectives, at the end of this year now we will meet and we will say what are our objectives for next year, and then subsequently see have we met those we do that. There are a few of us who meet, three or four of us who meet. Maintenance and administration is very important, the critical data, ah, making sure the critical data is there, making sure all critical data is backed up and backed up regularly, I wouldn't do it myself, just make that all the hardware necessary to do that and all the training necessary to do that is in place. Training, that's basically the core of it.

**Researcher**: If you were going to advertise your job tomorrow in a national paper, would you be looking for a teacher or an engineer, it's a difficult one.

**Coordinator2**: No the answer is, an engineer, they would be underutilized, I would be looking for a technician that knew what they were doing, an engineer would be underutilized. He would, because you would find even now here that I need to call on the external guy less, and less, and less.

**Researcher**: And is that because of the reliability of the equipment or because your skills are improving.

**Coordinator2**: Both, both. I’d say I would find I am calling him, yes because there is a fair enough cost still. I don't want to go down the road of say the timetabling, so anything to do with that I just call him in and it’s I'm not going to deal with that.

**Researcher**: But that would be more down to time constraints, administration on it.
**Coordinator2:** To a large extent yeah, you just can’t, because at the end of the day my job is guidance counselling and though I’m supposed to be getting time off for it, I would still work from nine until four straight, with a half an hour break.

**Researcher:** Yeah and finally do you believe ICT integration has been successful in your school.

**Coordinator2:** Ah, I think it has been more than most schools. Could it be better, I think its evolving and I am happy enough about that. I would have objected to handing laptops to teachers going back, but now I can see the value of it because even though some of them would be up in Dublin in Universities gone up with students, but then you still are getting more people, I'm very proud of a few of them now. One maths guy who couldn’t even switch on a machine, now he makes use of it to the nth degree in the space of about two years, brilliant, absolutely brilliant, so when I see that I say hang on, this is good.

**Researcher:** Yeah, yeah.

**Coordinator2:** And it has made it very easy for him, he is a lot more productive, he teaches honours maths, a lot more productive and he have a projector and the laptop and all his solutions, a lot more productive, making life much easier for him, but he uses now in a very good way.

**Researcher:** That's great, thanks very much.

**Coordinator2:** Ok
Appendix 7

**Researcher:** Can I start by saying thanks **Coordinator 5** for agreeing to see me and if you could tell us a little bit about your educational career to date.

**Coordinator 5:** My background is that I am an Art teacher, so I have a degree in Fine Art and a Post Grad in Fine Art. I did my training in Scotland actually and I taught in the UK then for 10 years. I have been teaching here for about 7 years and I have been E-learning coordinator for, this is my second year. So prior to that I was actually, managing the VLE in the school, so I started that initiative, so I have been working in the IT area for, actually all of my 7 years in the school.

**Researcher:** Ok, and would that have been how you became the schools IT coordinator.

**Coordinator 5:** Am, the previous IT coordinator, went into another role, a different role, coordinator of coordinators which is an interesting title, and there was a need for somebody else to take up the ICT coordinators role, so I was invited to that because I had already done so much work in that area. So it kind of in a way I grew into the role.

**Researcher:** And initially what skills did you have that enabled you to carry out your duties.

**Coordinator 5:** Well I'm not a techie at all, although I would be above average as regards managing technical issues, but I'm not a techie and I don't see that as a pre-requisite for the job actually.

**Researcher:** I suppose that’s the difference between the E-learning coordinator and the ICT coordinator.

**Coordinator 5:** Now initially my title was ICT coordinator but there was a good reason for changing it, but the reason I have I suppose was seen to have the skills for the job is I was teaching ICT in the school anyway. So I would have been teaching at transition year, Microsoft Office Specialist and because I was someone who was comfortable working with ICT, in my
previous post in other schools I would have used ICT a lot. I would have been working with virtual learning environments stuff even prior to coming here. So if you like I had come from a culture where working in the school where ICT was prevalent so I had a similar expectation that we would arrive at that point here. So basically I was used to working with ICT and I was identified as a member of staff who was comfortable using ICT and interested to promote initiatives in ICT so that’s how I grew into the role, but what skills I have, none specifically, no formal qualifications. I think a lot of the time in schools, it’s whoever puts his hand up, and says, yes I will do it.

**Researcher:** Or as you said, previously, the teacher who is identified as the one who is handy with computers.

**Coordinator 5:** And I say that because I worked in the UK for 10 years and it was very different over there, so you would have had a completely different, there would have been a different, there would have been ICT on the curriculum, and there would have been ICT teachers who most likely would have degrees in one aspect of ICT.

**Researcher:** It was a formal subject.

**Coordinator 5:** Yeah.

**Researcher:** Actually on that, did that help in the schools that.

**Coordinator 5:** I think that depended on the school as is always the case, in the school I worked in there were. It was a big school, 1250 students, I worked there for 6 years in the UK and it made a very significant difference there, yeah.

**Researcher:** The survey, the questionnaire that I did prior to interviews, showed that almost 40% of coordinators felt they didn’t have the necessary skills.

**Coordinator 5:** Well it depends on how you see the post I think. I don’t see the post as a technical post. I don’t believe that you need to have technical people on the staff. If you want to have a technical person on the staff you should have a technician. You should have a technician fixing things and you
should have coordinators coordinating things. So I would see myself as an E-learning coordinator. Now what I actually do I, if something is broken in the school I don’t feel that I have to fix it, my role is to liaise with our ICT support and to ensure that they can fix the things in a timely manner. Then my role would lean towards developing an E-learning culture in the school and more to E-learning and supporting staff and making strategic decisions about E-learning in the school.

**Researcher:** And around external support, you have a contract with a company in the area.

**Coordinator 5:** We do.

**Researcher:** And do they call regularly or only when they are needed.

**Coordinator 5:** Regularly, the schedule is they are here for one morning in the week.

**Researcher:** And is that sufficient, does it cover the basics.

**Coordinator 5:** Am, if, it’s not, we are reviewing that, because our infrastructure is growing so we are having to review it, but at the moment it’s debatable. We are in discussion here as to whether we should have an in-house technician or whether it is satisfactory to have ICT support in the way we have it. Now there are also available remotely, to offer support remotely and I can ring them for example about an issue and they might advise me over the phone and I can sort it out locally. But is it satisfactory or sufficient at the moment we are finding there are issues around that. It might be more desirable to have a, there are pros and cons. One of the issues about having support timetabled once a week is that it is not available when you need it, because it’s not always about technical issues that need routinely maintained, it not always about preventative maintenance. There are difficult issues that teachers have with the basic use of the technology which might be better supported if there was a technician in-house that said at the moment we are satisfied with the arrangement we have.
**Researcher:** Outside of the hours where the technical support comes in, you are the first port of call.

**Coordinator 5:** Yeah, if I can put it right I will put it right and if not I say put it on the list and people understand that and they work with it.

**Researcher:** The questionnaire I did showed that over 90% maintained the ICT equipment as part of their role, but only half provided training to staff I am just wondering within the E-learning coordinator role, do you provide training and what kind of training.

**Coordinator 5:** I do. I provide training. There is a limit to the amount of training I can provide because of my own timetable and because of availability, for example if I have frees during the week, it doesn’t necessarily correspond with frees that other teachers have. So providing training has been after school and what I have done is, one of the big issues was the introduction to a virtual learning environment and I provided training after school for that and one to one support then during the school day as and when that was possible. More often than not you are relying on teachers goodwill, where you provide it in their free time and your free time, that the reality of it, that not always satisfactory but that is the constraints of time available. The other training this year I have offered is based on training being rolled out by the NCTE so I would have Web 2.0 training this year and I would have adapted that to local needs. So when I advertised that course I also invited staff to identify areas that they might be specifically be interested in, that they might need to address, which I did, so that was what was rolled out. Now that was a voluntary course, so that was for staff where they wanted to come in. In the past we would have always done basic ICT training where we for example we would run it and the bigger issue was basic ICT skills, so we did an ICT skills analysis and we did some training for staff who needed some basic skills. So that is the kind of training that we have offered.

**Researcher:** Around the training in your own time in and around your own timetable, do you have hours allocated to the post.
Coordinator 5: At the moment I don’t know but that’s just the way thing happened because we had a member of staff last year who had a number of hours allocated for basically technical support and he moved to another institution at a time where is wasn’t possible to re-do the timetable, so that will be reviewed and I will have sometime available next year.

Researcher: I am just wondering because, in 40% it wasn’t a post of responsibility and 66% had no hours allocated, with those two facts in mind, in your own school, what’s the status of the post.

Coordinator 5: I think the status of it is quite high and growing because it’s really a top down thing there. Senior management in the school, the Principal really views E-learning as a growing area of increasing importance and he is trying to position the school, to be able to be, if not as a centre of excellence, certainly to be on that road on that journey of integrating ICT into Education and he understands that one of the key roles in achieving that is in our case, the E-learning coordinator. So the post I think is growing in its status within the school and that will probably be better off next year when I have time. So yeah I know for example I will have time next year, I know it wasn’t possible to make it available this year, but I know it will be made available next year and I know that because the post is seen and being one where it needs time, it cannot be properly executed if you don’t have the time.

Researcher: Yeah.

Coordinator 5: I do think there is an issue with the status of the post nationally.

Researcher: In what way.

Coordinator 5: I don’t think that the role of ICT coordinator is valued enough in schools nationally, from my own discussions with ICT coordinators in other schools and I have done training for ICT coordinators and I know that is an issue for ICT coordinators and that will be reflected in things like, whether it’s an A post or a B post or whether there is time allocated with it, I know that is an issue nationally, probably not so in our school.
Researcher: Can it be resolved.

Coordinator 5: I think it can yeah, I mean, there are certain posts in schools, posts are based on answering the needs of a school, now the needs of schools are changing, and one of the needs that’s going to be more of a part is E-learning, and integrating and developing an E-learning culture and it is understood from the ICT framework and various other reports that the E-learning coordinator has a key role in integrating ICT in a school and if that’s a greater need for schools and if that role is becoming of increasing importance then the role needs, if not redefined, certainly re-evaluated. So for example a year head is an A post, in every school it would be an A post. I think there is going to have to be a shift in the culture valuing posts in schools and the E-learning coordinator, ICT coordinator is going have to be brought higher in the pecking order and how that is achieved is a different issue. But fundamentally it is going to have to come from the senior management in the schools.

Researcher: It probably will, I know at the moment, from my own research, that a lot of the coordinators although they have no hours allocated, it’s not just good will they are doing it for, there is an acceptance that at the moment its difficult, but they are under, they are going on the hope that when things improve.

Coordinator 5: Their role will be better valued.

Researcher: Their post will be better valued, it is valued by the Principal as a role that is important but there are budgetary constraints.

Coordinator 5: I think that’s probably true, posts develop according to the needs of schools, and those needs are changing, and I think E-learning as a part of school life has changed considerably even in the last 2-3 years. There is a greater emphasis on it you know. And hopefully there will be better investment in the ICT structure in schools and there is going to be naturally enough more pressure to manage it.

Researcher: Most of the schools, almost 80% felt that there equipment was either good to very good and over 80% felt that teachers had a positive
attitude towards integrating ICT into their teaching, so in the past not having the past not having the infrastructure was an issue around the reluctance of teachers to use it, so it seems we have sorted out a lot of the infrastructure problems and the teachers do seem to have a positive attitude, and yet it doesn’t seem to be working.

Coordinator 5: Yeah.

Researcher: Nationally, not locally, perhaps in your schools it may be to a greater degree, but nationally it doesn’t seem to be working, can you see why.

Coordinator 5: I can because I think you need, you see, I think the infrastructure in our school we are in a very good position I don’t know if that is true for a lot of schools really. I’d say it is better that it was but I’d say it’s still not adequate for what they are being asked to achieve with ICT in Education. That said, looking at our situation we have a good infrastructure there are still impediments to integrating ICT into Education, and the thing that people have to talk about eventually, is the thing that is at the core of the system which is the curriculum assessment and really you have got to start the conversation there, because the key driver is not going to be ICT frameworks which isn’t by the way a curriculum or a syllabus, its and enabling framework but enable you to do what to meet the requirements of the curriculum assessment. So you know you can talk around in circles as long as you want, but what are teachers fundamentally accountable for and accountable for as well, results of examinations, attitudes of parents, expectation of parents, and of their students and that all comes back to curriculum and assessment and I would guess and I know this from experience from my old school trying to evaluate initiatives. If you really get down to it, what is the driver, its curriculum and assessment and how is ICT and achievements in ICT recognised in curriculum and assessment, very little. So you know why isn’t it working, what are the drivers, and the key driver, you know, you could flood the school with technology in the morning and some training and you might find that what you might find is the bigger issue is the cultural shift and the cultural shift isn’t just about teachers
attitudes, it's also about what are their constraints and what are they accountable too and therefore what do they feel they have to do to be successful in their job, and the answer is getting kids results in the examinations and I don't think that ICT in Education is properly reflected in the curriculum and assessment to a degree that will see very significant integration of ICT in teaching and learning. That's my short answer to the question.

**Researcher:** That's a very valid point. It does come back to exams, assessment at the end of the day.

**Coordinator 5:** I can illustrate that now because if you take our schools with a good ICT infrastructure and if you look at how teachers are using it, you will still for example at leaving certificate, that what students really want is notes. They want notes, they don’t want to be distracted by perhaps more student orientated, student centred learning or approaches, because there is a culture of notes, and there is a culture of achieving at examination, so it challenging for the teacher to move beyond that culture when it’s still anchored to the exam itself, do you follow me.

**Researcher:** Very much so, yes.

**Coordinator 5:** Because I have been using for example technology, specifically Wikis with students at Leaving Cert to get them to work collaboratively and peer to peer assessment and learning. Sometimes they just look at you and say can you not just give us the notes, do you now. So that’s an illustration of the point, because you talk kind of abstractly and say it’s all affected by the curriculum, when it gets down to it the kids just want to get the points in the exam. There is an established route for getting that in the exam and they want to stay on that road because they believe that’s how they are going to succeed. Now maybe it's not fair to focus on the Leaving Cert and examinations which is a very protected area.

**Researcher:** It is the big focus though isn’t it.

**Coordinator 5:** It is and the end of the day, less so Junior Cert and certainly less so transition year where you have much more freedom to be, to try
different approaches and methodologies and technologies. Yeah I think if you are wondering why it’s not working that’s where you start looking first.

**Researcher**: And it’s not an easy fix, regardless of the infrastructure or the training you provide.

**Coordinator 5**: You still have to look at, what are the drivers, what are teachers supposed to be delivering, what are they accountable to, what is the key driver and that is the curriculum assessment.

**Researcher**: Does the school have a written ICT plan.

**Coordinator 5**: It does yeah.

**Researcher**: And would the other teaching staff members be aware of it, and would they take it seriously.

**Coordinator 5**: Yes, it’s available in our VLE, they can access it at will. Would they take it seriously? I think teachers are very positive towards ICT and towards the schools efforts to integrate ICT into Education in teaching and learning, but would they take it seriously, at the same time in this school there is a respect for teacher autonomy and for teachers to make decisions about what is valuable for their students in their classroom, in their teaching. In the same way as the ICT framework is an enabling framework, any strategies in the school are at the same time not prescriptive they are trying to be enabling as well. So they respect the ICT policy, I think they do as much as they would respect another policy in the school.

**Researcher**: Around the issue of monitoring a teacher’s use of ICT in a classroom, without ongoing monitoring how can you be sure that ICT is contributing to effective teaching and learning.

**Coordinator 5**: You can’t at the moment.

**Researcher**: You wouldn’t go in and observe.

**Coordinator 5**: No, you have to, and that’s where we haven’t fully implemented the E-learning plan, getting the departments to draw up internal audits, to set their own targets and then to review them at the end of the year
is the mechanism by which we would do that, but there wouldn’t be a formal evaluation of how teachers are using, that would be done through the E-learning planning process. There is not generally a culture in schools of evaluating how teachers teach anyway to be honest.

**Researcher:** No

**Coordinator 5:** No, there is not a professional, that doesn’t exist within the structure here, and I was involved with that kind of structure in another country so, in the UK where you have performance management procedures, I was in the performance management structure over there, there is nothing equivalent here. A formal performance management structure, in the same way there isn’t a formal procedure for evaluating the use of ICT in the classroom by teachers. Except in so far as we would have an E-learning planning process; which would be part of the larger school development planning process; which would be the normal place for it as well, so how is it going to be done. Eventually departments will do their own internal audits, set their own targets and review them at the end of the year themselves and then we would try and support that.

**Researcher:** So if the infrastructure goes in, the data projector, the laptop or computer in the classroom. I suppose by providing good training in house training in a way you are not providing guarantees but you are providing a platform that will enable that teacher to go forward and use ICT effectively in the classroom.

**Coordinator 5:** Yeah and we would hope to offer more, to be honest. The school would feel that I think, and this is my own opinion, that teachers feel that there would need to more training and that there is not enough allocated time for that training. There is perhaps too much emphasis on teachers going to continuing professional development opportunities in their local Education Centre for example in their own time. The school can’t provide it because there is not the allocated time there for it, and not that it can’t provide it, but to provide enough of what teachers feel they require, but yeah we would hope that by providing training that will support teachers in using the technology.
**Researcher:** Going back slightly to the technical support, the model that you have in place in the school, could you suggest a better alternative, apart from, well you did mention bringing in a technician on a fulltime basis.

**Coordinator 5:** We have considered that, it's a challenge for schools because it has to be financed of course.

**Researcher:** Difficult.

**Coordinator 5:** Difficult yeah. I think the difficulty with something like that is if somebody has all of the knowledge and if you like the built up about how the institution manages the ICT and they move onto another institution you can be left short, where as if you have contract with a support company and that's ongoing, there can be a continuity with that. We are looking at this whole issue now ourselves. The problem with it is, the support isn't always there when it's wanted, and even if you had an ICT coordinator, they are not always available when teachers want the help. So I can see a lot of argument for having a fulltime technician in the school because when the support is required most likely, the support can be provided. So at the same time there are arguments against that.

**Researcher:** As far as I am aware, there are only two schools that have a fulltime technician and both would be private schools and the Coordinator, one of the two that I have spoken didn't know how you could survive without having 40 hours allocated to the post.

**Coordinator 5:** Yeah

**Researcher:** Because I have been trying to arrange an interview with him and he is trying to look at a date in June when the school is closed, when he is there for a few weeks for maintenance and updating the network before they all come back in September and that's how busy he is with a 40 hour week.

**Coordinator 5:** I'm not surprised, I'm not surprised. I imagine it's the same or you average ICT coordinating teacher, you cannot walk down the corridor without someone approaching you regarding one issue or another, it is an
incredibly busy post. We are looking at it as an issue for our school, we can see our valid reasons for having an in-house technician, very desirable position to be in and at the same time because of the whole issue of the costs involved we will probably continue with a contract with a support company.

**Researcher:** And what about other models of support, some schools what they have is an ICT team, where there might be 3 or 4 teachers in the school, that would have a certain level of technical expertise that could take it to a certain level and then the support company is brought in every Monday afternoon or whatever to fix anything they can’t, it takes the pressure off an individual being the sole contact to come too, if there is 4 or 5 teachers dotted around the school if you like, and they look after these 5 rooms or these 5 teachers or whatever.

**Coordinator 5:** Yeah, that’s an interesting idea.

**Researcher:** An in the U.S., they work with the students, where the students are the experts and they would have Transition Year and there equivalent Leaving Cert students as technical experts. There are things for and against it but.

**Coordinator 5:** We toyed with that a bit and well, definitely I wouldn’t be for that one.

**Researcher:** Ok

**Coordinator 5:** Definitely no, from a security perspective I wouldn’t.

**Researcher:** Yes, that’s one aspect, but the one theme that keeps showing up in papers that I am reading, is the reluctance of the teacher to give over the role of the expert.

**Coordinator 5:** No it’s not that actually no, it’s not that I think, young people can get confused about their roles as well, they are not adult and mature enough to understand necessarily their role in terms of how they would work with people, they might be able to fix things but they mightn’t realise there are responsibilities in doing that.
**Researcher:** Ok, fair enough.

**Coordinator 5:** I think that it's asking a lot of young people, I have seen some issues around that, where we have done little bits like that in our own school and I would be cautious with that one. I'm not saying it's going to work or not going to work, but I would be cautious. Look at the end of the day really there just needs to be an increasing in funding you know. VECs might need to start offering centralised services of their own, for example, because the VEC could be providing services to its schools. There is one possibility. I don’t know I'm not at all comfortable with teachers providing technical support, I don’t see why that should even be in the mind set, because it a technicians job to provide technical support and it’s a teacher’s job to teach. And when you are looking at what their concerns should be, it should be about teaching and learning, using the technology, it’s not about the technology, whether it works or not, that’s just one issue, it’s actually really just a fundamental. It's like, it’s not about if your car starts or not, it where you want to go with it.

**Researcher:** True.

**Coordinator 5:** There the questions teachers should be talking about, they shouldn’t be talking about nuts and bolts, and RAM and stuff and what's working and not working. They just shouldn’t be having those conservations, period like, you know, it just needs to be like water, you turn on the tap and it works. The bigger challenge is actually the whole culture shift in terms of teaching and learning, I think the infrastructural thing is actually a huge distraction, I think it’s a woeful distraction, and I'm not one to be distracted by that because, although I am constantly distracted by that, but I see that as a distraction. I also understand it’s the number one priority in the schools that the thing works.

**Researcher:** The thing has to turn on.

**Coordinator 5:** If the thing doesn’t work you might as well not have any other conservation anyway but the point I am making is that is just not where we should be devoting our attention, certainly not the teachers.
**Researcher:** I am wondering, the school has a company that comes in and does a certain amount of maintenance and I’m sure there are other schools in the area that have other companies that do maintenance or perhaps the same company.

**Coordinator 5:** They do a lot of work with other schools.

**Researcher:** There is a certain reliance on that company and as you said there is good and bad, its good because there is the continuation factor, I am just thinking would it not be more effective, for a technician hired by and paid for by 5 schools, I’m not saying just to wonder about but to spend a certain amount of time in the schools. Would it be more cost effective, I know you are trying to divide that person in to 5 or 6 or whatever it may be, but it might be easier to drive because you are splitting the cost of that person over the schools.

**Coordinator 5:** That is something we have discussed here actually, because we are a VEC school and its something that’s has been in a discussion but nothing has been done about it at the moment, but certainly I suspect that schools are going to have to collaborate to maybe get a better service and better cost.

**Researcher:** I think it could work. There is an issue if you hire a technician in your school, is the technician on a contract, how long is the contract for and then you have to look at other issues around pension you know there are bigger issues than just having the 30 or 40 thousand to pay this guy for 3 or 4 years or whatever it may be. In another school they have a company hired that supply a technician on a fulltime basis, so the school are exempt from any of the employment issues, they simply just have to have the funds available to pay this company for this annual contract.

**Coordinator 5:** That’s more the model we are looking at, to be honest we have talked about increasing the dedicated, if you like, having the equivalent of dedicated hours, an individual technician maybe between our school and one or two other VEC schools, so that’s likely the model we are leaning towards here.
Researcher: I think that model could be very effective, the only issue that I can see is if it’s between 2 or 3 schools, is where is the person based, and the availability of that person, is there a priority factor.

Coordinator 5: That’s not one we have trashed out now. Our contract runs January to January the calendar year so in our current year with support, there are a lot of issues emerging and we are looking at how we are going to move forward from January next year, and that model we are talking about there is likely, at the moment we are leaning towards that. If not shared with another school, then increasing our own hours, we are thinking for a number of reasons it might be better to stay with the support company. As you say you have a contract that makes the proper provision.

Researcher: Well there are two examples locally that you could talk to and see which model is working.

Coordinator 5: It would be interesting to know that, yeah.

Researcher: Actually do you currently collaborate with any other schools around ICT issues, I keep going back to ICT issues Coordinator 5, I have to apologise.

Coordinator 5: No problem, the technical side of it you mean.

Researcher: The technical and the E-learning. Pedagogical and E-learning would be very tightly linked.

Coordinator 5: On the pedagogy side the E-learning. On the technical side no, but because we are a VEC there would be a lot of shared experiences, through the VEC. The VEC is good in that sense. You find what has worked in one school doesn’t in another and we won’t do this because it wasn’t successful in that school. So there is a lot of shared experience and knowledge, which is very beneficial. Not to a great extent in the E-learning, do we collaborate, am, not formally no. We have, oddly enough, we have a link with a school in Northern Ireland, and we have had interesting exchanges about how they manage E-learning up there as opposed to how we manage it down here. That has been interesting I have to say. I spent an
hour or two with the Deputy Principal up there, looking at what they do and they were very interested to see we do very much the same job and we do it very differently so it was interesting. So we have looked and that was actually about pedagogy about they have, what so they call their system up there for VLEs, C2K isn't it, they have a facility which is a bit like the virtual learning environment and they were interested to see ours. Then they were also interested because they have an approached E-learning in their curriculum, which is very different to ours. Their curriculum has changed actually, a better way of putting it is that their curriculum has changed quite a lot. So we were looking at how that has affected the way they use the technology, and they have statements which are more measurable statements, if I understand it correctly, I am not very knowledgeable in this now but, I think they have to achieve certain targets with their students in the use of technology and I think that might be reflected in their examination, I can’t be certain on that. So we had an interesting discussion round that, it was quite a while ago now, but how they are trying to promote E-learning with their staff and how we are doing it with our staff so we have had a bit of collaboration there. Actually I do meet with other ICT coordinators and have conversations with them, you know socially.

**Researcher:** I’m wondering, do you think there would be any value in collaborating more closely with other schools, if you were to take a dozen other schools in the Limerick that again I know not looking at the whole timetabling thing around it, but do you think that there could be a value in if you like sitting around the table a sharing of ideas.

**Coordinator 5:** I think so yeah.

**Researcher:** I suppose a focus group

**Coordinator 5:** Yeah I think so; because in every school there will be people who are doing things very well and it is interesting to know what it is they are successful at and you might be able to replicate it in your own school, that’s basically it you know. Now we did do a bit of that, we have had collaboration with another group of schools, it just was short lived. We met only twice actually, we weren’t able to maintain it but it was interesting where teachers
they did share what they were doing and that was actually specifically with E-learning. You would find that your eyes were opened you know. You get good teachers with technology in every school and it might be a Science teacher in one school and it might be a Maths teacher in another school, so you know your, whatever department in your school can learn from successes in another school, I think it would be a great idea actually yeah. The little that we have done on that actually was very good, it didn’t sustain actually, it wasn’t sustainable.

**Researcher:** Again I suppose if you want to sustain it, if you want to be successful.

**Coordinator 5:** You have got to invest in it all the time.

**Researcher:** You do and realistically it would have to within the school year and schools hours and something that is given over to coordinators again it probably around increasing the level of the post, they are all probably tied together.

**Coordinator 5:** Yeah I agree with that. I would agree that schools collaborating would have benefits. What little we have done on it we have seen benefits from it and we do if you like in our own school, in that sometimes at a staff meeting a teacher would present something that they have done with technology and just show it, and for sharing it.

**Researcher:** Are there teachers in the school that are still reluctant users of ICT.

**Coordinator 5:** There are of course yeah, and there will be for some considerable time.

**Researcher:** Are they vocally opposed.

**Coordinator 5:** No. I don’t think people are anti or are agitated about the drive to integrate ICT into teaching and learning because I think people see that it’s prevalent in society, it’s just how do we use in our sector, no I don’t think so.
Researcher: And those reluctant users, would they have any effect on other teaching staff.

Coordinator 5: That's a difficult question to measure that one, that's an interesting question, what is the culture, how are teachers attitude developed, that one now I couldn't answer, because I think that one now is too subtle to give a blunt answer to, but I think definitely there can be cultures among teachers, a pro element to anti technology, but how the attitudes are developed I don’t know.

Researcher: This is a very open question but in your opinion and in your school, how does ICT contribute to effective teaching and learning

Coordinator 5: Am, I think that’s a question for each individual teacher, to be honest with you. That’s a very broad question.

Researcher: Have you seen the benefits.

Coordinator 5: I have seen it my own teaching now, but I have seen it in other teachers in their subject teaching as well, am, I mean in simple terms I have seen, I will give you one example. I can see the teachers who were very positive about getting the data projectors in the classrooms that happened very recently in our school, all classrooms now have one. Teachers felt that it was overdue, it was no longer something that might be a luxury, and they felt they needed it, because they could start to use the wealth of material out there on the internet etc. that’s available to them and they could use it in their teaching and learning. So have I seen something concrete recently, yes I have, it is impacting on their teaching and learning, I would guess yeas because we got a real sense of people who were relieved, not delighted and chuffed to have them, the data projectors, but relieved, they felt they needed them. So I haven’t gone into measure how they are using them, but I’m guessing the ones that said finally we have data projectors, then they must have felt they needed them to enhance their teaching and learning in the classroom.
**Researcher:** A term that is banded about a lot in the area of ICT, is innovative use of ICT in the classroom, I'm wondering what is your understanding of the term.

**Coordinator 5:** Well, it's only innovative if it's doing something that maybe isn't main stream practice.

**Researcher:** Could you explain

**Coordinator 5:** Well the use technology in teaching and learning it isn't altogether in the mainstream at the moment. For example people would be comfortable using PowerPoint or using technology to make a presentation, which is one thing, but actually getting the students to use the technology, to get them involved in interactive learning in project based learning, using technology in research work; I don't think there is a great deal of that going on. So it's trying to get student to learn collaboratively to use their research skills, to do project based learning, things like that using technology, I think that is probably innovative because it's not mainstream but I think there is lots of tried and tested approaches to doing that and there is just maybe not a lot of experience with it in secondary schools. So it's innovative in the sense that it is new it’s not common practice but it’s not ground breaking, extraordinary, inventive and creative approaches, its already being used somewhere else just to start bringing it into your own classroom.

**Researcher:** One thing I have found in my research, and to coordinators that I have spoken too, there doesn’t seem to be a black and white document that defines the role of the coordinator, I can see why because it might be restrictive and for somebody that is being offered no hours to do it, I think they are being to do too much. If I asked you to write a job description for the post of E-learning coordinator what would the key elements be?

**Coordinator 5:** Well, am, I suppose, it's a good question, it's a leadership role really, it's about giving vision and direction to E-learning in the school. There is a responsibility to oversee the maintenance of the ICT infrastructure, that's a given.

**Researcher:** Oversee it.
Coordinator 5: Yeah, not to get to fix it. I am actually totally against that, and it's not a personal thing but I just don't think teachers should be fixing things, they should be using them.

Researcher: I have been asking the question while I have been out there, it won’t please you but; the ICT coordinator is it easier to make an engineer out of a teacher or a teacher out of an engineer, or technician if you want, but that role I know you don’t like the idea of teachers having to be technicians to be an ICT coordinator or E-learning coordinator, but the fact is that 90% considered maintenance to be a key element in their posts and the one that takes most of their time.

Coordinator 5: I can understand that, that’s the reality of it. In terms of how the job description might be drawn up, I think first of all that it is fundamental that there is somebody who is accountable for the management of the ICT infrastructure that's a given, also the development of an appropriate and sustainable ICT infrastructure, you need to understand the technology and the application of the technology. So yes you would have to oversee the maintenance of the ICT infrastructure and moving forward, the development of appropriate infrastructure for the needs of the school so that’s definitely the role of the ICT coordinator but at the end of the day the technology is there for teaching and learning and it needs somebody to promote the development of an E-learning culture in the school and to enable teachers to integrate ICT into their teaching and learning, that is what I would see is the core role of the E-learning coordinator, as he is called in our school and that is where I think it should be, I'm not saying there won’t be a knowledge and understanding and management of the technical aspects of it but that shouldn’t, you have got to get the balance right, it’s got to be about the application of the technology and promoting that and I think that will become in any case increasingly a part of what E-learning coordinators, ICT coordinators will find themselves having to do. There is going to be more and more technology coming into schools I would imagine and wireless technology is going to transform things and its not as far away as I used to think it was, I used to be thinking, five, ten years away but I think it has moved far quicker that even I anticipated and I think to future proof schools
for that, they are starting to look at it, the 100Mpbs Broadband scheme, there is going to be wireless, they are thinking what are the portable devices that students are going to be using, will they be carrying a school bag with books in it for the future, I don’t know. Are the publishers, educational publishers, starting to produce E-learning materials, yes they are, are they good at it yet, no they are not, but they will get good at it. I just think that the technology is moving towards a type of technology that will be useful in schools and I think that the big carrot then for schools is ok we have this, now how are we going to use it, and who is going to give a bit of leadership in that sense and who is going to facilitate that and in terms of drawing up the role of the E-learning coordinator that is going to be a key part of the role.

**Researcher:** I think in the past different Minister have come in and they have thrown money at it, but they haven’t sustained it, they haven’t followed it through, and I think it is evolving, it doesn’t matter what school you go too, or where it is, the ICT infrastructure is evolving, there is no two ways about it, it’s here and it’s here to stay, but it’s how its driven is going to be vitally important to the level of success and how we measure that success is going to be very difficult.

**Coordinator 5:** Yeah, I think that where you are going to have to start looking at curriculum assessment. I really believe, there are other countries that that has been done, so it’s not that it hasn’t been done elsewhere, it has, and I think that is something that has to be looked at.

**Researcher:** Just finally do you believe ICT integration has been successful in your school.

**Coordinator 5:** Yeah I think, yeah it’s been very successful, I think we have been fortunate that the Principal has been very proactive in doing that, achieving that, but while I think it’s been very successful I think there is a very real awareness in the school that it’s a journey, it’s a road that you travel and the important thing is to be on that road and to be travelling it purposefully, that it’s not something, it’s not just like switching on a light, you can’t get it right over night, its more about having a culture of change and development regarding E-learning and a willingness to engage and I think
that’s what we have here, and I think that’s what’s successful about it, rather than the school being a centre of excellence, I know that we are doing a lot of things wrong but probably the good thing is that we are certainly we are on that journey of developing E-learning in the school and that is the important thing.

Researcher: Coordinator 5 thank you very much for your time.

Coordinator 5: No problem, hope that helps.