

Integration of ICT in Primary Teaching and Learning:  
**How can the role of the ICT co-ordinator help?**

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## **Summary:**

**This study examines the role of the ICT co-ordinator and the influence such a role has on ICT integration in primary schools. Although five years have passed since IT 2000 was launched in Ireland, data resulting from this study indicate that schools need steady and competent support to instigate the integration of ICT into teaching and learning. Questionnaires provide data from the ICT co-ordinators while data from interviews with individual ICT advisors give insight to their support of ICT integration. The resulting data is studied in the context of the ICT co-ordinators role in the integration of ICT. Early adopters seem to be making strides in integration but late adopters, need to be convinced that ICT is a tool that leads to constructive learning. Literature discusses the view that ICT integration involves cultural change, which happens in individual schools. This change may need to be facilitated. Knowledgeable and fully supported ICT co-ordinators may be able to lead colleagues further along the path to ICT integration in primary schools. This is a role that deserves comprehensive research as it may hold the key to successful ICT integration.**

# **Chapter 1**

## **Introduction**

### **1.1 Background to ICT Co-ordinators in schools**

**ICT has been evolving in schools since 1973 when the Computer Education Society of Ireland (CESI) was formed, as early adopters began to see the potential of ICT to enhance teaching and learning in the classroom. This phenomenon was not confined to any particular level or location of school and was driven by ICT enthusiasts, some of whom were to play a leading role in its introduction to schools nationwide. Thus, when a computer, complete with Internet and email connection, was supplied to all schools by 1999, the role of ICT co-ordinator was introduced.**

**In Ireland the pilot Schools Integration Project (SIP), was rolled out in 1999 as part of Schools IT 2000. Primary Schools in Ireland were invited by the Department of Education and Science (DES) to pioneer ICT integration into teaching and learning.**

**Collaborating schools were asked to nominate a member of staff as ICT co-ordinator. In schools not involved in ICT projects, the current situation is, that ICT co-ordinators are teachers, who are asked by Principals to take on this role or, teachers who volunteer to co-ordinate ICT in schools, because they are competent in ICT or have a relevant qualification. Some Principals and Deputy Principals have adopted this ICT role themselves.**

**As the current researcher is an ICT co-ordinator, with the dual role of full time class teacher/ deputy principal, in a primary school, it seemed like an opportune time to study this role. This research is taking place in the context of five years experience as ICT co-ordinator in a challenging unprecedented role, managing a social change of culture within the school. Unlike technology integration teachers in Greece School in New York, Irish teachers retain their teaching duties and teaching schedule:**

*Technology Integration teacher or ICT Co-ordinator?*  
*In 1990, the Greece, New York School District re-opened its West Ridge Elementary School as a "K-5 school of choice."..... Having learned from past experiences, district officials now recognize that training the teachers in the effective use of this technology was just as important as purchasing the hardware itself.*

*Consequently, a new teaching position was created, that of "Technology Integration Teacher." This person would not be assigned normal teaching duties. Instead, he/she would be responsible for working with teachers (and students) showing them how to effectively incorporate technology into their lessons... One final point: It is important to note that we are most definitely not "computer technicians." We are all experienced classroom teachers with a strong background in pedagogy and knowledge of our curriculum. We seek out ways to help our teachers integrate technology into that curriculum.*

[Greece School site accessed 01/10/2003]

Hence the difficulties in Ireland of the dual role of full time teaching and the time-consuming co-ordination of ICT come into play.

## 1.2 ICT in Primary Schools in Ireland

In the 1980s and 90s the introduction of ICT into primary schools seemed to depend largely on visionary teachers, known as 'early adopters', who were motivated by their own educational beliefs and principles to introduce ICT into their classrooms, as found by Smeets and Mooij, (1999). Teachers were mutually supportive through membership of the Computer Education Society of Ireland (CESI), and the Irish National Teachers Organisation (INTO).

Policy making in ICT by the Department of Education and Science (DES) has been ongoing since 1999, beginning with Minister for Education and Science, Micheál Martin stating:

*In Ireland we have our own unique curriculum and school culture, and it is vital that we explore how best ICTs can enhance the delivery of our curriculum. To date a small number of innovative teachers have pioneered the use of ICT within their schools, but SIP will now allow a large number*

*of teachers to establish best practice models across a wide variety of school settings including special needs, curricular technical and support.... All SIP projects will have inbuilt evaluation structures in order to facilitate the dissemination of their findings to all teachers on an ongoing basis.*

**(Innovative ICT projects in schools NCTE, 1999, Page iii.)**

### **1.3 Aim of this research**

**The role of the ICT co-ordinator in primary schools in Ireland is selected for this study. Specifically, the researcher wants to find out if the emerging profile of ICT co-ordinator role is that of an overseer of computer equipment, or a promoter of a culture change to active integration of ICT into teaching and learning, or both.**

**The ultimate goal of this study is to get a picture of the value of the ICT co-ordinator's role in the integration of ICT into teaching and learning. This study explores the current tasks of the ICT co-ordinator in primary schools in Ireland. The researcher wishes to find out how ICT co-ordinators perceive their role, and if they feel supported, in terms of specific professional development, likewise if they experience support from Management, by way of time release from class teaching duties. This insight could provide a starting point from which to finding solutions to emerging needs of school based ICT co-ordinators. It could inform policy makers in the ongoing endeavour to enable the integration of ICT into teaching and learning, in primary schools.**

**The focus of the research is mainly on ICT co-ordinators and their involvement in leading/managing the integration of ICT into teaching and learning, assisted by;**

- support they receive from management in carrying out their role;**

- recognition of their role through time release from duties in school to perform their role as co-ordinator and the availability of professional development opportunities;
- satisfaction with their position;
- involvement in evaluating the extent of ICT integration into teaching and learning within the school.

The situation in Ireland is that ICT advisors were appointed regionally, to assist teachers with the integration of ICT into the primary curriculum by providing in-school tutorial advice. The research will also focus on the ICT Advisors and their reciprocal dealings with primary school ICT co-ordinators.

#### **1.4 Policy**

This study intends to show briefly that the role of the ICT co-ordinator is very pertinent to the integration of ICT in schools throughout E.U., and therefore to Ireland's primary schools. This will be done through the eyes of the practitioners, the teachers in the classroom and the ICT Advisors who visit them in schools to provide advice, support and solutions to problems. In the words of Finch (1986) this research:

*...By its very nature it is likely to evaluate social policy from the perspective of those who are its targets rather than those who make the policy.*

(Finch, 1986, p174)

The current researcher considers this 'from the ground up' model to be the most appropriate because it mirrors the DES policy for ICT in Ireland, to allow integration of ICT to evolve in individual schools. This model also allows those most affected by the policy to integrate ICT into teaching and learning, to have a role in its development.

## **1.5 Literature**

**In Chapter Two, current literature will be reviewed, on ICT in educational policy across the EU, regarding the integration of ICT into schools, and the role of the ICT co-ordinator therein. The performance of this role in schools across Europe will be examined to see if there is an emerging common profile of ICT co-ordinator. Responsibilities of this role will be explored and support from school management by way of time release will also be examined. It is widely acknowledged that teachers are the main change agents in the classroom as reported by Smeets and Mooij, (2001), ICT co-ordinators, whether they are principals or staff, also play a very important role as change agents. However, the undefined role of ICT co-ordinators may mean that they sometimes hold a token responsibility in schools, as found by Mulkeen (2001) and Pelgrum (2001), who stated that the measure of success ICT co-ordinators achieve, depends largely on the support they get from school management by way of time release from class contact. Teacher training and in-service professional development is seen as an area of vital importance by Demetriadis (2002), and Kajlert (2001). NCTE(2002) and BECTa (2002) also support the need for professional development for ICT co-ordinators. One aspect of ICT co-ordination in schools is assisting colleagues in the development of their ICT capability, a role that involves mentoring and leadership skills. Mentoring colleagues, is a challenging factor; hence teachers feel that their leadership skills are not adequate for this adult mentoring role. ICT co-ordinators would appreciate an opportunity for professional development, to enable them to relate to colleagues, as adult learners.**

## **1.6 Methodology**

**The study was designed as a survey of ICT co-ordinators among a representative sample of primary schools in Ireland.**

**The Methods used in this research are described in detail in chapter three. The data was collected by questionnaire from a geographical spread of primary schools of all sizes, ranging from those with less than one hundred pupils to the largest city schools of approximately one thousand pupils. There are gaps in the knowledge where schools replied that they did not have anyone acting as ICT co-ordinator and therefore did not take part in the questionnaire survey.**

**This is an area that requires further study, but is outside the remit of the present research. By way of triangulation of data, interviews were conducted with thirty per cent of ICT Advisors, who support and advise the ICT co-ordinators, who are the respondents to the questionnaire.**

**The analysis of the quantitative and qualitative data thus obtained produced the findings specified in chapter four. The results, which support the main hypothesis of the research, indicate a correlation between the degree of ICT integration and the degree of challenges faced by the ICT co-ordinators. This appears to be in concurrence with the findings in literature in countries across the EU, as ICT co-ordinators strive to overcome obstacles to ICT integration into teaching and learning.**

## **1.7 Findings**

**Chapter five contains discussion of the findings, which exposes the common challenges that ICT co-ordinators deal with daily. However, the policy of undefined roles for ICT co-ordinators is reflected in the present state of play where schools find themselves at various stages of ICT integration. Each ICT co-ordinator playing their part in evolving the most effective role for the school in which they work.**

**The overall view of this role of ICT co-ordinators in the integration of ICT indicates that it is a complex one which is evolving at various rates.**

**New developments in ICT moves at galloping speeds, so it remains to be seen if Irish schools can afford to evolve home-grown solutions to integrating ICT into teaching and learning.**

**Recommendations are made in the final chapter, based on the conclusions drawn from the research. Policy makers and school managements, it seems, could greatly assist the integration of ICT in schools by fully supporting the evolving role of ICT co-ordinators. In the light of recent developments, which involve extending broadband facilities to all schools in the country imminent support would be appropriate and timely.**

## **Chapter Two**

### ***Literature Review***

#### **2.1 ICT Policy in the EU**

**The literature suggests that a policy of integration of ICT into teaching and learning is top of the agenda for EU governments for the 21<sup>st</sup> Century. The Information Network on Education in Europe (Eurydice, 2002) discusses public policies for incorporating ICT into schools, higher education and initial teacher training. The report states that:**

*A National or Official Policy encouraging the use of information and communication technology in Education is in operation in all European countries.*

**(Delhaxhe et al, 2002, page 1)**

**The rush for technology integration in Europe seems to be driven by governments looking to the education system in their countries to provide a skilled workforce, for the economic and social growth of countries. (OECD Report, 2001)**

#### **2.2 The EU Policy on the role of an ICT Co-ordinator**

**The EU Countries reported on, by OECD all favoured the use of ICT in schools to improve the quality of teaching and learning (OECD, 1999 and 2000). Reports from the literature, point to a broad consensus in European countries, on the significance of ICT integration in education.**

**The literature suggests that the United Kingdom, Sweden, Netherlands, Greece and Germany take a serious view of the need for fully prepared and supported ICT co-ordinators in schools. This is in contrast to the experience of ICT co-ordinators in Ireland where they have not been given specific training.**

**In 2001, a study of ICT in learning was conducted across twenty-six countries of the EU (Ireland not included). The study in fourteen of these countries included primary level education. The researchers emphasised the major ICT policy change that had taken place since 1998 stating that**

*Perhaps the most significant changes in educational ICT have been in the policy arena. In the past three years, many top-level international and national policy-makers have committed their governments to taking bold, new steps to utilize ICT more extensively in education.*

**(Anderson and Pelgrum, 2001, page iii)**

### **2.3 ICT Policy in Ireland**

**In Ireland, ICT policy in education states that ICT is used as a tool for learning.**

**The National Centre for Technology in Education (NCTE) is the ICT implementation arm of The Department of Education and Science (DES) in Ireland. NCTE (2000) outline twelve main policy points for the future of ICT planning in schools.**

**Five of the twelve policy points refer to teacher professional development and school empowerment in relation to ICT integration into teaching and learning. No direct reference is made to the need for ICT co-ordination personnel. (NCTE, 2002)**

**(See current research Appendix 1)**

**Thus, with almost half of the policy points referring to teacher professional development it is reasonable to assume that the policy makers believe in the significance of teacher professional development in ICT.**

**The planning matrix included in the policy document states that:**

*Integration is not simply a linear process, with a clear beginning and end*

(NCTE, 2002, p15)

**They outline this process as three stages of ICT integration at primary school level, namely,**

- **initial stage,**
- **intermediate stage and**
- **advanced stage.**

**Yet according to this three-stage development matrix, the presence of an ICT co-ordinator in a school indicates, that a school has reached an advanced level of integration.**

(See Appendix 2 NCTE, 2002)

**It seems that principals and staff must first of all pass through the initial and intermediate stages without the assistance of an ICT co-ordinator. Then, an advanced stage of ICT integration is reached when an ICT co-ordinator is appointed, or found among colleagues who are willing to volunteer for this duty. This seems contradictory in terms, as it suggests that the fact that a school becomes aware of their need for an ICT co-ordinator means, they are promoted from an intermediate to an advanced stage of ICT integration. This researcher believes that the earlier somebody is appointed to promote ICT in a school, then the sooner that school could reach a higher level of integration. The ICT Policy unit acknowledges that integration is more defined in schools where an ICT co-ordinator takes responsibility for ICT promotion in school. As an experienced ICT co-ordinator this researcher agrees with this latter view.**

**NCTE policy suggests that advanced schools need to define the ICT co-ordinator's role, which involves:**

- *Co-ordinating the compilation and production of the ICT plan*

- *Identifying training needs and facilitating staff training.*
- *Developing strategies for integration of ICT across the curriculum.*
- *Liasing with Senior Management and advising on ICT strategies.*
- *Evaluating the use of ICT strategies in the school.*
- *Developing a means by which the ICT infrastructure can be maintained and upgraded.*

(NCTE, 2002, page 31)

The current researcher believes that all stages of integration would benefit from the services of such a co-ordinator.

#### **2.4.1. Professional Development Needs**

Thus, NCTE wishes the ICT co-ordinator to constantly assist in the refinement and improvement of integration of ICT. In the current researcher's experience, a need arises for progressive teacher professional development, from this ICT co-ordinator profile. The NPADC Report (2001) endorses the importance of professional development in education.

(See current research, Appendix 3)

Lynch (1999), similarly links access to professional development by teachers as a key to the success of ICT policy as espoused by the U.K. Government. Demetriadis et al (2002) claim that ICT training enables teachers to gain a better professional profile. In this researcher's experience as an ICT co-ordinator, school policy in relation to proactive teacher professional development and ICT integration into teaching and learning, clearly indicates the value schools attach to ICT integration.

In Ireland pre-service teachers are prepared in relevant theory and pedagogy, although it is not yet acknowledged that ICT has proved itself as a tool for educational improvement (Kellaghan, 2002). Thus, it is reasonable to deduce that as pre-service teacher training does not prepare any trained ICT co-ordinator, provision

for transfer of information to all teaching staff will be necessary for in-service teachers for some time to come.

#### **2.4.2 Professional Development and Education Centres**

In Ireland, Education Centres are the schools first port of call for professional development. NCTE describe the role of Education Centres as:

*A network of learning communities for teachers, there are 21 full-time and 9 part-time centres located throughout Ireland. The education centres support the in-service needs of local teachers and play a key role in implementing NCTE's Teaching Skills Initiative, known as TSI. ICT advisors are based at the education centres.*

(NCTE website)

ICT Advisors are the link between Education Centres and schools, as well as organisers of professional development courses. They provide such ICT courses as teachers need but are restricted by rules and logistics, governing minimum numbers required. This mitigates against uptake of such courses in rural areas, where clusters of many schools are needed to make a course viable. This researcher believes that ICT co-ordinators need professional development in leadership roles if they are to lead colleagues in this era of change. Naace (2002) also strongly emphasise the need for effective leadership and co-ordination of ICT in schools. It is claimed by Smeets and Mooij (1999) that teachers who are satisfied with their computer co-ordinator are found to make more use of ICT in their lessons.

#### **2.4.3 ICT Advisors and Professional Development**

Each full-time Education Centre appoints an ICT advisor whose supporting role is described by NCTE as follows:

*ICT advisors provide advice on:*

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

(NCTE website)

**School Principals or ICT co-ordinators make contact with ICT Advisors who are funded by the DES to provide advice on all ICT needs to those schools. In view of the aforementioned six headings, this assistance could be curriculum focused and classroom based. The catchments area of each advisor is large and includes primary and secondary schools. The advisors may experience budgeting and finance difficulties as well as lack of technical support, as they work to provide schools with professional development courses.**

#### **2.5.1 Co-ordinator Profile in EU**

**In 2002, a report on ICT integration in eleven countries, including Ireland found that eight of the eleven countries (Greece France, Finland, Iceland, The Czech Republic, Latvia, Lithuania and Malta) had made arrangements in schools for:**

*Coordinators/teachers who are highly trained to support, advise, encourage and act as experts.*

(Key Data in Education 2002, Chapter D, page 2)

**In a study of twenty-six countries in Europe it was reported that:**

*Some countries begin with the services of a co-ordinator with a defined role and prescribed support from management level. Most schools have a 'computer coordinator' to oversee or help manage the computer equipment, if not the instruction. This person may be in charge of the computer curriculum, teach a computer class, or provide technical or instructional support to teachers.*

(Anderson and Pelgrum, 2001, p382)

Ireland was not among the 26 countries studied by Anderson and Pelgrum (2001), but from experience as an ICT co-ordinator, it is possible to presume that co-ordinators in Ireland did not have an opportunity to avail of initial training. Teachers were likely to have volunteered for the role, or were requested to accept it because of their ICT skills or their seniority level on the school staff. Indeed, the Pelgrum findings in Europe match the current researcher's experience as ICT co-ordinator. ICT tasks are carried out among colleagues, without specific training for the role, and without time being allocated to perform the extra duties. However, as ICT co-ordinator, the current researcher has found that the time release from class duties is allocated in project based ICT. This refers to the initial projects such as SIP (1999) that were piloted in schools to introduce ICT as a tool for teaching and learning. A total of forty non-contact days per year was allowed for a class teacher to plan and implement effective ICT co-ordination for SIP. This vital time allocation is not carried through to the current ICT integration plan. Outside of specifically funded ICT projects there is no facility for time release in mainstream classes.

### **2.5.2 United Kingdom ICT Experience**

In the United Kingdom BECTa (2002) have a top down approach where teachers are given a prescribed curriculum in ICT.

Schools teach ICT as a core subject. DfES clearly defines the skill requirements and all aspects of the work of an ICT co-ordinator. The emphasis is on long term guiding and planning. (BECTa, 2002). These requirements include co-ordinating staff development. Release time is available for planning for integration. In Wales, the University of Swansea, also recommends a prescribed profile of an ICT co-ordinator. This profile suggests that they have integration responsibilities that include staff training and acting as models for other teachers. However they, like their Irish counterparts, have no non-contact time in which to carry out their role. (Whole School Approaches to Developing IT Capability Site 2.3.4)

### **2.5.3 Teacher Vision in ICT Integration**

What does Information and Communication Technology (ICT) mean to educators and their pupils? It could be equated to innovation promoting good quality teaching and learning. (Naace & Becta 2001). From a pedagogical point of view Braak, (2001) argued that ICT '*appears to*' have more to offer the pupil than traditional methods. Spector et al., (2002), found that technology integration is viewed as '*primarily about human use*'. Spector et Al., (2002), is mainly concerned with the teacher's vision at the point of implementation, as the defining moment for integration, a view, which Pelgrum (2001) supports. He finds that ICT co-ordinators may be found, across Europe, at the hub of integration- the point of implementation.

Researchers Smeets, Mooij et al (1999), Demetriadis et al (2002), Pelgrum (2001) concur that teachers need to be convinced that ICT improves teaching and learning before they will adopt this or any other new teaching method.

Benson (2001), also claims that:

*It is teacher vision that will ultimately determine the level of integration into teaching and learning.*

(Benson, 2001,p57)

ICT co-ordinators are needed in schools to empower teacher's vision, by 'knowledge transfer' (Pelgrum 2001 p 176). From school-based experience and from evidence in the above literature it is reasonable to deduce that teaching staff in some Irish schools identify with the findings of Ely (1999). He states that co-ordinators are unhappy with the 'status quo', and with the present undefined role of ICT co-ordinators. Therefore, they may feel the need for leadership training, staff development and co-ordination of ICT plans and assessments.

### **2.6.1. Integration of ICT in Europe**

Researchers of ICT are focusing on the reality of integration of ICT in teaching and learning. There is a sound pedagogical reason for this. Constructivism involves students in learning by doing rather than by observing. Students in their classrooms place increasing demands on the need to change the focus from traditional teaching methods to supporting the construction of knowledge. The twentieth century educational theorist Dewey (1916), who denounced the passive role of learners in rote learning, stressed the importance of learner engagement in discovery of knowledge for oneself. Vykotsky (1930s) saw teachers as mediators who helped students build on a base of knowledge. It is a fundamental belief of this researcher that these theories have stood the test of time and practice in teaching and learning. This writer believes from experience in the classroom that the process of constructing knowledge, benefits from the ready access that ICT provides to sources of the information used to construct knowledge. Literature supports the view that:

*We need to draw on reliable knowledge whatever its source to meet education and training needs.*

(Baker and O Neill, 2001, p170)

Ireland's Primary School Curriculum (1999) endorses this theory in its statement that:

*The principle of guided activity and discovery and the importance of the teacher in providing the most effective learning experiences for the child are central to the curriculum.*

(The Primary Curriculum DES, 1999, p15)

In Ireland, integration is defined by Butler & Mulkeen (2000) as reaching the point where there would be less emphasis on technology and more on learning. It is noteworthy that a report by Ireland's Inspectors in Education expressed concern at:

*the lack of focus on teaching and learning in relation to ICT in schools*

(Fifty School Reports, 2002 P 14)

In Denmark, where the ICT plan identifies the ICT co-ordinators as '*pivotal figures within the school*', the authors refer to the use of ICT supporting teaching and learning in Folkeskole. They cite the integration mantra as follows:

*–from learning how to use ICT to using ICT in order to learn.*

(Bryderup & Kolwalski, 2002, p475).

The Brussels Education Point (BEP) 1995, set out to implement IT policy into practice in Flanders to stimulate the use of ICT in secondary schools. (Braak, 2000).

**In the Netherlands according to Smeets and Moorij (2000), the objective is to embed ICT into primary and secondary education, vocational training and adult education. To reach this objective teachers may receive special training in ICT lasting for one year after their initial training. On its completion, they are given the title of ICT co-ordinator. (Delhaxhe, Arlette et al, 2002 )**

**Eighteen EU countries have a policy for in-service teacher training in ICT.**

**Estonia is putting policy into practice through “small scale ICT projects,” and has created an infrastructure to support local projects through the leadership of local co-ordinators. (Dissolving Boundaries 1999).**

**In Sweden, a National Action Programme ITiS 1999-2002 supports**

*pedagogically-orientated in-service training for teachers in teams*

**(Kajlert, 2001p 113).**

**According to Kajlert (2001) ICT is seen as a way of assisting students in the construction of knowledge by drawing information from an Information Rich Society.**

**An important element of training is how to function as a tutor to colleagues. One and a half weeks of full-time study is allocated for training. The current researcher believes that this model of professional development is admirable for its emphasis on mentoring colleagues and on leadership. This researcher holds that, as in other facets of education, good leadership could lead schools towards integration of ICT.**

## **2.6.2 Obstacles to ICT Integration**

**According to the literature there are a number of clearly identifiable obstacles to ICT integration:**

*Three major issues are obstacles to teachers introducing ICT into the classroom: lack of control, lack of resources and inner dissatisfaction with current status.*

(Demetriadis et al, 2002, p 22)

Demetriadis (2002) , finds that lack of supervision staff and lack of technical assistance, insufficient computers and peripherals are the main obstacles to integration. These obstacles are parallel with lack of resources as identified by Pelgrum (2001). He lists ten major obstacles to ICT integration. Teachers lacking ICT knowledge/skills, according to Pelgrum, find it difficult to integrate ICT in instruction, and feel a lack of control. A lack of trained support is added to the list of obstacles by Kajlert (2001). The current researcher believes that trained ICT co-ordinators could support teachers, in managing the ICT resources, giving the teachers that sense of control that is needed.

Looking at ICT integration from the opposite point of view, Smeets and Mooij (2001) accentuate the positive by referring to the ‘conditions relevant to integration’ citing Ely (1999). Ely’s top condition among eight others is co-ordinator ‘satisfaction with the status quo’. This mirrors the obstacle of inner dissatisfaction referred to by Demetriadis et al (2002).

Teacher participation is identified as another key factor to ICT integration and the authors conclude that

*ICT co-ordinators and teachers are especially crucial in the implementation of the required changes on the educational ‘shop floor’.*

(Smeets and Mooij, 2001, p 268)

### **2.7.1 ICT Co-ordinators: Leadership and Training**

This writer regards leadership for effective integration, as a vital element of the co-ordinators role.

**This is supported by literature that connects management and leadership styles by stating that:**

*An understanding of management styles should make us more effective leaders.*

**(Everard and Morris, 1990, p22)**

**Literature supports leadership by principals and mentors to implement technology innovation in the way we teach and learn. Kincaid and Feldner (2002), whose research focused on leadership for technology integration found no connection between mentor competency and teacher success in integrating ICT in the classroom. The authors believe that one of the reasons may be:**

*The limited amounts of training mentors receive. A second significant factor could likely be the selection and assignment of mentors.*

**( Kincaid and Feldner, 2002, p79)**

**The current researcher agrees with this finding as it parallels the Irish experience of limited training. Pelgrum (2001), sees ICT qualifications for support staff, as a necessary ingredient for implementation of ICT.**

**BECTa (2002), identifies the role of ICT co-ordinator as one of ‘clear strategic leadership and management’. BECTa recommends that:**

*The ICT co-ordinator should work closely with the senior management team and other members of staff, each of whom will need to share some of the workload.*

**(See current research Appendix 4)**

**In the Irish context, literature finds that the presence and status of an ICT co-ordinator is:**

*a significant factor in higher use of ICT in school*

**(Mulkeen, 2001, p14)**

The findings from many authors, Casson et al (1997), Bacon et al (1997), Naace site (2002) subscribe to the theory that integration of ICT is dependent on co-ordination of a whole school effort:

*a culture in negotiation' where there is exceptional leadership.*

Demetriadus (2002, p19)

Research carried out by Morgan (1998), and reviewed by Smeets & Mooij (1999), corresponds with this view. Morgan believes that:

*the emerging role of IT Co-ordinator is central to the development of computers in education*

(Smeets & Mooij, 1999, p218)

They refer to the main factors influencing ICT use by teachers and argue strongly that:

*Teachers should be supported by an ICT Co-ordinator.*

(Smeets & Mooij, 1999, p9)

Current national and international thinking on best practice in integrating ICT into teaching concurs with this latter recommendation. Kincaid, and Feldner (2002), Reynolds, et al (2003). In a study of integration of IT in schools in Hong Kong, Kwok et al (1999) reported that co-ordinators are drawn from experienced teachers who have also got managerial responsibilities. As in Ireland, the co-ordinators in Hong Kong have not had their other duties reduced accordingly.

### **2.7.2 Leaders as Peer Mentors**

Peer mentoring is a widely used strategy in classrooms in Ireland where pupil 'experts' assist other pupils. The concept of peer teacher mentoring is relatively new among teachers however. Traditionally, teachers are totally responsible for their classroom

and respect each other's professionalism in this area. Other countries have peer-mentoring systems in place. Demetriadis et al (2003) describe a project to promote the use of ICT in Greek schools employing a teacher mentored in-service for teachers. Teacher mentors attend a yearlong postgraduate specialisation course. Teachers welcome teacher-mentor efforts according to Demetriadis et al (2003).

This type of mentoring is part of what ICT co-ordination is about and for schools in Ireland, it is one of the few ways open to some teachers for hands on tutoring in ICT integration.

According to Law and Glover (2000), mentoring is a skill whose time has arrived but warns that it needs to be set within a supportive framework:

*In some schools mentoring responsibilities enable staff to demonstrate pedagogic and administrative skills*

(Law and Glover, 2001, p201)

Everard and Morris (1990), claim that leaders, wherever they are in the leadership structure need skill in relating to people. Facilitative leadership with democratic teamwork where a co-ordinator is working with colleagues could produce positive attitudes according to Hughes (2001). This is also the finding of Kincaid and Feldner (2002). The current researcher agrees, as integrating ICT into teaching and learning appears to involve a whole school cultural change. Social issues, around ICT, are discussed by Casson et al (1997). They claim that technology implementation is about:

*social change process, and the requisite leadership behaviours need to be somewhat out side the norm.*

(Casson et al, 1997,chapter8)

**While concurring with these ideas, this researcher hypothesizes that a blend of leadership styles is necessary for ICT co-ordination. A new culture of collaboration is necessary to draw together all partners, inclusive of pupils, teachers, parents, management and the wider community. Authoritative style may give way to nutritive and facilitative to encourage learning and promote partnership with colleagues. Leadership and ICT co-ordination implies a middle management role, which in the Irish system is in place. In many cases the ICT co-ordinators are also in the role of principal or vice principal within the school. The evidence from literature suggests that vision to change to teaching and learning with ICT rests largely with teacher leaders:**

*Effective change often depends on our ability to adapt to our role.*

**Heywood J. (1989 p 39)**

**In this chapter the researcher outlined ICT policies in EU countries regarding Integration of ICT into education and sought to find evidence of endorsement of the role of the ICT co-ordinator in this process. The need for ICT integration as supported by the literature as well as the training needs of the co-ordinators, was examined. Teachers come to light as mentors and implementers of ICT working in school districts where each has its own policy and response to ICT needs. Leadership styles to sustain the ongoing process of ICT integration were examined in an effort to observe more fully the leadership role of the ICT co-ordinator.**

**The literature provides a framework to understand the current situation in Ireland, where many leadership styles may emerge in response to the many variables at work in the area of ICT integration in schools**

**The next chapter outlines the methodology for research into the role of the ICT co-ordinator.**

**This literature review will help to guide the design of the interview and questionnaire.**

## Chapter 3

### Methodology

#### Introduction:

The researcher is acutely aware of the ongoing development of ICT in primary schools and that the data being collected, gives a 'static' picture of a short period of time, in the process of ICT integration in primary schools:

*Like all surveys the picture it presents is essentially a static one.'*

(Finch, 1986, P22)

ICT integration is an ever-changing process, which because of its rapidly evolving nature has no comparable precedent in education. The snapshot, could give a real insight into the workings of ICT integration in the early part of 2004.

Arising from the literature review, this chapter sets out to describe the methods used to research the role of ICT co-ordinators in a sample of primary schools in Ireland.

#### 3.1 ICT Co-ordinator

The ICT co-ordinator has become an increasingly familiar role in primary schools in Ireland. Just what exactly this role entails and how it influences teaching and learning using ICT is less understood or documented. Thus, the aim of this research is to study the role and its educational impact. The focus of the research is mainly on the ICT co-ordinator's:

- involvement in leading/managing the integration of ICT into teaching and learning within the school;
- support received from management in carrying out their role;

- **recognition of their role through time release from teaching duties to perform their role, and the availability of professional development opportunities;**
- **satisfaction with their role;**
- **involvement in evaluating the extent of ICT integration into teaching and learning within the school;**

**The research will also focus on the ICT Advisors and their reciprocal dealings with primary school ICT co-ordinators.**

### **3.2 Timing of research**

**From experience in this role, the researcher knows that it is highly likely that a number of ICT co-ordinators are combining this role with full time teaching duties and possibly with another post of responsibility i.e. principal-ship, deputy principal-ship or other middle management post. Timetables are indeed very busy. As the intention is to study the situation of ICT co-ordinators across the country in all sizes of schools, and in as many counties as possible, the geographical spread of the respondents is another factor. Knowing this to be the case, and taking into account the time available to the researcher, interviewing ICT co-ordinators was ruled out. Questionnaires were chosen as a method of collecting data from ICT co-ordinators using electronic mail, post, personal delivery and collection. This would increase the validity of the data collected by ensuring a high number of respondents as well as a broad spectrum of situations from two teacher schools (less than a hundred pupils) up to schools with a staff of over forty teachers, (a thousand pupils). The questionnaire would produce both quantitative and qualitative data as some questions would be open ended giving opportunity for qualitative responses. It was necessary to plan as far as possible to lessen the intrusive nature of the questionnaire.**

*A questionnaire is always an intrusion into the life of the respondent.*

(Cohen and Mannion, 2000, p245)

With this in mind, November was chosen as being the suitable time for respondents to complete questionnaires.

### **3.3 Sampling The Study Population**

A sample group was chosen along the lines suggested by Cohen and Mannion (2000), taking the following factors into consideration:

- A. The sample size.**
- B. The representativeness and parameters of the sample.**
- C. Access to the sample.**
- D. The sampling strategy to be used.**

(Cohen and Mannion, 2000, p92)

- A. In Ireland the number of teachers on the staff establishes primary school size. This overall group represents schools with approximately 30 pupils up to 1,000 pupils. Sample size is determined by means of overall group.**

*In an ideal world a researcher would be able to study a group in its entirety.*

(Cohen and Mannion, 2000, p143. )

However, while studying a group in its entirety is not feasible this current study has chosen an acceptable sample size, which will provide relevant results.

- B. The representativeness and parameters of the sample.**  
ICT co-ordinators are drawn from the staff of schools and therefore are teachers first of all. This makes them a homogenous group of teachers who work in primary schools.

**This following analogy about professionalism, in the nursing profession, is used to illustrate this homogeneity.**

**To apply the analogy to the teaching profession and the field of education, ‘teachers’ could replace the term ‘nurses’.**

*Nurses are increasingly being asked to take specialised roles. Some specialise in nursing children or the elderly or children with moderate and severe disability. Some are learning to work in the high technology environment. Others are drawn to mental health care or learning disabilities and so on.... There are real differences between the distinct nursing specialisms. Still there is the core value, principles, beliefs and philosophies that are common to the nursing professional no matter the differences in terms of specialist branch of nursing.*

**(Schostak ,2002, p9)**

**Teachers are drawn to specialist roles such as learning support, learning disabilities, peer training in curriculum, but still have core values, principles, beliefs and philosophies, common to the teaching profession. This research sample of ICT co-ordinators is drawn from teachers who have a role in ICT in school. While treating this entity as a homogenous one, in the interest of covering most existing types of schools, they are divided into sub groups as follows:**

- 1. Small schools of less than one hundred pupils with two to four teaching staff and more likely to have one or more computers in each classroom.**
- 2. Designated co-ordinators involved in ICT projects such as Schools Integration Project (SIP) schools. ICT co-ordinators could have more experience than those in sub group 1 above or in sub group 3 because of their early involvement with special ICT projects. All sizes of schools are represented in this group as the SIP project specifically chose schools representing all types of school size and geographical location. These schools**

could be relied on for email communication as they mostly belonged to a dedicated mailing list.

3. Larger city schools would provide balance as the antithesis of the first group. They are more likely to have space and funding for dedicated computer rooms with perhaps a designated ICT co-ordinating teacher.

It is hypothesised that sub groups 1 and 3 will have widely different ICT equipment levels.

#### C. Access to the Sample

Access to respondents is by email, or by post with stamped addressed envelope, or as chosen by participants themselves.

Hand delivery is suitable for the 'Snowball sample' (Cohen and Mannion, 2000) of large city schools.

Follow up reminders to be posted in the same fashion to encourage late returns if necessary.

#### D. Sampling strategy

There are 3000 primary schools in Ireland ranging from two teacher schools to forty teacher schools.

*The choice of which strategy to adopt must be mindful of the purposes of the research, the time scales and the constraints on the research, the methods of data collection and the methodology of the research.*

(Cohen and Mannion, 2000, p104)

Cluster sampling of teacher/ICT co-ordinators in primary schools was the chosen method along with stratified sampling within this homogenous group. Namely small schools ( up to 100 pupils), medium sized schools (100 to 400 pupils) and Larger schools (over 400 pupils). The SIP project invited all schools to submit projects with which they were willing to use ICT in teaching and learning.

Schools were chosen for participation on that basis, so it is reasonable to deduce that either of the schools in the three sub groups could have teachers who are ‘early adopters’ of ICT, and ICT skilled staff. This cluster sample fits neatly into the advice of Cohen and Mannion who state that:

*A stratified random sample is therefore a useful blend of randomisation and categorization, therefore enabling both a qualitative and quantitative piece of research to be undertaken.*

(Cohen and Mannion, 2000, p101)

Generalisation could be made within primary schools of Ireland using data from this sample because of the homogenous nature of the structure and timetabling of a cross section of schools.

### **3.4 Piloting Questionnaires**

Validity of the questionnaires was first tested for practicability, by piloting ten copies, some by email the remainder by hand delivery, with colleagues who have wide ranging teaching experience. Respondents were asked to test instructions, questions, and layout for clarity and relevance. They were also asked to look out for any difficulty in completing it, and for insensitivity or ambiguity in any question. Following Cohen and Mannion’s (2000) advice in citing Oppenheim:

*Everything about the questionnaire should be piloted.*

(Cohen and Mannion citing Oppenheim, 1992, p48)

Feedback was used to make any necessary modifications.

### **3.5 Collecting data from ICT co-ordinators**

This piece of research is aimed at the role of a specific group of ICT co-ordinators or those acting voluntarily in this role in

primary schools; the chosen group is ICT co-ordinators or personnel acting in this role. Within this sample 'purpose sampling' as outlined by Cohen and Mannion (2000) is enabled. The first piece of data collection thus involved the distribution of identical questionnaires to all ICT co-ordinators who are chosen according to cluster sampling, to gain geographical spread. (Cohen and Mannion, 2002, p101). However, this research wished to avail of all possible technology and thus sought to push out the boundaries, by using email as well as post, to access respondents countrywide.

The purpose of the test run email was to inform the principal of the primary schools of the aim of the research and to ask for the school's involvement in the study. The test run would establish if this channel of communication was functional in schools. ICT co-ordinators or personnel acting in this role, were informed of the research and its purpose.

### **Small Schools**

The first group to be contacted were small schools (up to one hundred pupils). All 75 schools in an Education Centre catchments area were emailed in a test run. This test run email informed of the research and its purpose, with a request to click *Reply* if they wished to volunteer to complete a questionnaire electronically. Alternatively they could type 'post' and click reply, indicating their preference for a hardcopy to be posted to them. Twenty schools replied by email with a seventeen of those opting for a hardcopy to be posted to them. Two replied by telephone indicating their mistrust of attachments and viruses, and indicating a preference for a questionnaire by post. For those opting for an electronic copy, detailed instructions were included to make the procedure straightforward. Three were contacted personally, given the same option and received questionnaires in

their chosen method. Two schools reported that no designated ICT co-ordinator operated in their school but offered to participate. Two schools responded by email and outlined in general terms how they used ICT in their schools, but did not wish to complete questionnaire as no teacher in their school held an ICT post of responsibility.

### **Teacher Mailing List Group**

The second group of ICT co-ordinators contacted was drawn from a nation wide ICT mailing list for teachers involved in ICT in their schools. The request for *participants* brought a very rapid response indicating an eagerness to be involved in the research. All twenty-three participants responded using email. This group would be seen as highly motivated adopters of ICT, as their main reason for being members of this group was to keep abreast of new ICT developments. Data obtained from this ICT enthused group could be viewed as being typical of enthusiastic early adopters but not typical of ICT co-ordinators generally. Their knowledge of their role could be more intense and their intrinsic motivation could mean that ICT tasks would be carried out voluntarily. Their willingness to share their ICT knowledge with colleagues was already evident in their frequent use of email. Among this group of teachers available to the researcher was part of a network of colleagues involved in a national ICT project named SIP some four years ago. This group could be identified with 'early adopters' and as such would have experienced a different level of contact with NCTE during their role as ICT co-ordinators of pilot ICT projects. Their experiences from co-ordinating this project could have a positive influence on their current standing and self-perception as ICT co-ordinators. Experience tells the researcher that working through this project would have given them opportunities to see at first hand, as in an action research, the logistics of introducing change in the form of

ICT to their colleagues. Their continued involvement would place them in a position to understand the ICT co-ordinator role as it emerges after the introductory stage has been completed. This is an example of *antecedent events* as mentioned by Cohen and Mannion, (2000, p129), that needed to be taken into account. One hundred per cent response from this group by email is indicative that they are proactive in the use of ICT in school. Schools in the project included all types and sizes of primary schools in a countrywide geographical spread. This fact greatly assisted access to the wider population being studied.

### **Larger City Schools**

City-based teachers who would participate by post was an important group who would provide access to ICT co-ordinators in larger schools, providing data from a source that would provide balance for the number of smaller and lesser equipped schools in rural catchments area.

Access to this group was gained through 'snowball' method where one teacher was personally invited by the researcher to take part. She received by hand a supply of questionnaires with a stamped addressed envelope enclosed. This teacher in turn invited colleagues in neighbouring schools to participate, thus creating a chain supply of respondent ICT co-ordinators in large schools. In the interest of standardisation of data, completion of an identical questionnaire was the method chosen to survey all schools in the sub groups. This would provide manageable qualitative and quantitative data, as the questionnaire design would allow for individual input in some answers if the respondent wished to do so. Cohen and Mannion (2000, p45) state that a combination of both of these techniques for data collection, (qualitative and quantitative) making use of the most valuable

features of each, is desirable. Of researchers citing Merton and Kendall (1946), it is stated that:

*the problem becomes one of determining at which points that should adopt one and at which the other approach.*

(Cohen and Mannion, 2000, p45)

The questionnaire and interviews were designed to collect qualitative and quantitative data. The former involved questions with an option of 'Other- please specify' in each question set. The latter involved questions on numerical data such as computer numbers, timetables and ICT training.

### **3.6 Ethics**

According to authors such as Bell (1999), and Schostak (2002), there is a need to adhere to a strict code of ethics. Due consideration was given to this aspect of the research as described by Cohen and Mannion (2000), who outline fourteen essential ethical points for conducting research. In accordance with Finch (1986), the current researcher has also identified that this study is like 'giving a voice' to ICT co-ordinators who are the receivers of ICT educational policy,

*where the aim is to achieve an understanding of the world from the perspective of those studied.*

(Finch, 1986, p214)

However, the researcher is following what Finch (1986) describes as 'the most active role of all for a qualitative researcher', which is acting on one's own behalf to research 'changing' policy rather than acting as some sort of advocate as cautioned by the same author.

Volunteers were sought from four known groups of teachers involved in ICT roles. As advised by Cohen and Mannion (2000),

they were given written guarantees of ‘anonymity, confidentiality and non-traceability,’ and assured of their rights to withdraw at any stage.

A cover letter with the questionnaire assured respondents of these guarantees, informing them of their right to omit any question they wished to.

(See APPENDIX 5 current research)

The name, telephone number and email address of the researcher was available to respondents, if further clarification was required.

### **3.7 Questionnaire Headings**

Topics were addressed under the following headings, on the ICT co-ordinator role:

- 1. school background information.**
- 2. position of teacher in role of ICT co-ordinator.**
- 3. professional development opportunities available to ICT co-ordinator.**
- 4. support for the role of ICT co-ordinator within the school.**
- 5. satisfaction with the present role of ICT co-ordinator.**
- 6. view of the post holder of ICT co-ordinator of the tasks and responsibilities of ICT co-ordinator.**
- 7. specific training received to equip the post holder for role of ICT co-ordinator.**
- 8. role of ICT co-ordinator in planning.**
- 9. role of ICT co-ordinator in assisting and evaluating integration of ICT into teaching and learning.**

### 3.8 Questionnaire Design

The goal was to design a questionnaire that would provide ‘minimum of information required’ as advised by Coolican (1999, p155), to acquire data on the role ICT co-ordinators, as they work towards ICT integration in schools. The aim was to collect data on ‘actual practice’ rather than prevailing ‘expert’ views” as cautioned by McNiff (1994 p74).

The issue of social desirability or giving socially acceptable answers to look good in the eyes of the researcher as described by Coolican (1999), is an important one. The current researcher was acutely aware of this possibility, so to counteract this, questions did not include any suggestion, that respondent was personally responsible for, or could alter, the actual ICT situation they were reporting on. Respondents were asked to tick as many answers as were applicable to their own situation, as well as an option under ‘*other: please specify*’. The first section sought background information to ease the user into the task. In question 5, on ICT co-ordination where a qualitative answer could be informative, there were three options of positive, negative, or *other, please specify*. This gave an opportunity to respondents to individualise their response.

Closed questions were used for statistical data on background, professional development courses, and perceived support from others.

*The supreme ideal is that all respondents will interpret an item in the same way*

(Coolican, 1999, p161)

To maximise the possibility of clear interpretation of the questionnaire, wording and terminology was kept jargon free. Abbreviations such as ICT were explained and terminology used, was that which would be familiar to respondents from their ICT Skill courses Phase One and Two ICT.

Distribution and collection was by post or email as chosen by respondents, and by hand where possible.

(See APPENDIX 6)

### 3.9 Interview

Individual interviews with thirty three percent of ICT Advisors were planned to provide an overview of the role of co-ordinator in school, as experienced by advisors in the course of their work.

The geographical spread of Education Centres, the base for ICT advisors, presented a problem of distance and time.

Face to face interviews were conducted with five advisors, the remaining two interviews were conducted by telephone, seeking the same information. The qualitative data from the interview together with the quantitative data acquired from respondents of the questionnaire would enhance the validity of the study. Cohen and Mannion, (2002) refer to this triangulation:

*as a powerful way of demonstrating concurrent validity, particularly in qualitative research.*

(Cohen and Mannion, 2002, p 112 citing Campbell et al, 1959 )

And Finch, (1986) also pointed out that:

*A case can be made on the grounds that since quantitative and qualitative approaches each have strengths and weaknesses, their combination provides the opportunity for research outcomes that are more authoritative and convincing.*

(Finch, 1986, p183)

The current researcher planned to make use of this dual approach. In interviews more qualitative data would be sought

following the advice cited in Cohen and Mannion (2000) This meant:

*Seeking qualitative knowledge expressed in normal language.*

(Cohen and Mannion, 2000, p272 citing Kvale, 1996, p30)

Accounts of the role of ICT co-ordinator based on Advisor observation and interaction could be compared and contrasted with those accounts given by questionnaire respondents in line with Kerlinger (1970) as cited by Cohen and Mannion (2000). This could portray an insider view of the role of ICT co-ordinators in integrating ICT into teaching and learning, as clearly as is currently possible to the researcher. A definition of ‘convergent validity’ provided by Cohen and Mannion (2000) reads as follows:

*If two measures agree, it can be assumed that the validity of the interview is comparable with the proven validity of the other measure.*

(Cohen and Mannion, 2000, p121).

This need for validity was the purpose of combining interview with questionnaire to collect data.

Emails were sent to all interviewees to outline interview content, before the scheduled interview took place.

(See APPENDIX 7)

Permission was sought to record the proceedings. A transcript of this would then be emailed to interviewee, if desired, for verification of content.

### **3.10 Interview Design**

From the researcher’s classroom experience, ICT Advisors are invited into schools by ICT co-ordinators to support them in ICT

**tasks. An interview with individual ICT Advisors was planned to get an overview of their experience of advising ICT co-ordinators in school. The researcher was aware of the need to identify and deal with possible sources of bias to achieve validity in the interviews. The relationship and characteristics of interviewee and interviewer as well as the content of questions were closely examined following the findings of Cohen and Mannion (2000). The standardised open ended interview after Patton (1980,p206) as cited in Cohen and Mannion (2000, p 271) was possible, to provide both qualitative and quantitative data as well as giving another dimension of triangulation when analysed in conjunction with the questionnaire. So the semi structured interview was chosen. Great care would be taken to avoid bias by avoiding ‘leading’ questions, or prompting or probing, in conducting the interview. The interview addressed the following topics:**

- **Examples of good practice in ICT integration observed in schools that would indicate integration was ongoing.**
- **Role of ICT co-ordinators in school structure as perceived by Advisor.**
- **Management/leadership styles encountered in day-to-day role performance of the ICT co-ordinator.**
- **Types of support requested of the ICT Advisor by ICT co-ordinators in schools.**
- **Satisfaction of ICT advisors with available access to schools and to ICT co-ordinators.**
- **Awareness of involvement by schools and their ICT co-ordinators in competitions, ICT Days, seminars or demonstrations indicating ongoing integration.**
- **Major obstacles to integration of ICT into teaching and learning as reported by ICT co-ordinators to Advisors.**
- **Degrees of up take on specific training if any, organised by Advisors, aimed at post holders for role of ICT co-ordinator.**

- **What advisors would change in the present structure of advisory role?**

### **3.11 Ethical Issues around Interviewing**

- 1. Informed consent**
- 2. Confidentiality**
- 3. Consequences of interview**

**As these ‘three main areas’ are identified by Cohen and Mannion (2002, p292) as issues around interviewing and declared by Kvale, (1996, p111-20) to be ‘problematic issues’, precautions needed to be taken by the interviewer before proceeding. Data and transcripts would be made available to the interviewee for verification as soon as possible after the interview.**

**Content was explained in conversation and by email. Interviewees freely gave consent to be individually interviewed. The purpose of the research was made known to them with assurances of confidentiality and anonymity.**

**Key responsibilities in relation to information that are kept on computer about individuals will be strictly adhered to. Data Protection Act (1984) Updated (2002)**

**(Data Protection Site: data privacy page)**

### **3.12 Interview Structure**

**Of the five categories of interview laid out by Coolican, (1999) the semi structured (informal, but guided) would provide better qualitative data than the other four. But the triangulation with the questionnaire topics demanded that some questions be fully structured to include those topics.**

**Guided by the Patton Table (1980, p206), as laid out in Cohen and Mannion (2000, p271), closed quantitative interview seemed to facilitate comparisons with answers in questionnaires and shore up data analysis of both sources by triangulation. To counteract**

possible restrictions of this method of interviewing, a portion of the interview was planned to gain qualitative data by addressing the interviewee's observances from inside the situations being researched. Kvale (1996) names it:

*knowledge expressed in normal language,*

(Cohen and Mannion, 2000, p272, citing Kvale, 1996)

A focused semi structured interview was chosen as it was planned to take place after analysis of some questionnaires and:

*in response to a known situation which was analysed by the interviewer prior to the interview*

(Cohen and Mannion, 2000, p273)

This also follows the advice of Kvale (1996 p30), as cited by Cohen and Mannion (2000 p272), focusing as it did 'on particular themes neither strictly structured nor entirely non directive.'

Open-ended questions were planned for the opening session to ease both interviewer and interviewee naturally into the interview.

(See Interview questions, Appendix 8)

This chapter has set out the methods used to focus on a sample of primary school ICT co-ordinators and their work. The role of ICT Advisors as they interact with them, was also explained, as were the methods of interviewing ICT advisors.

In chapter four this research will examine the findings from questionnaire respondents and data from ICT Advisors in order to establish how:

- co-ordinators view their needs for professional development
- co-ordinators view themselves - as overseers of equipment or as providers of instructional support - or both.
- management supports them in carrying out their role through time release from duties.

## Chapter 4

### Findings- reporting results

#### 4.1 Post of ICT Co-ordinator

Returned questionnaires reveal the emerging role of ICT co-ordinator in primary schools in Ireland, which would seem to show that in smaller schools in particular, 60% of Principals and almost 20% of deputy principals adopted this role in addition to their responsibilities. Four percent of these schools have a special post of ICT co-ordinator.

See Fig. 1.

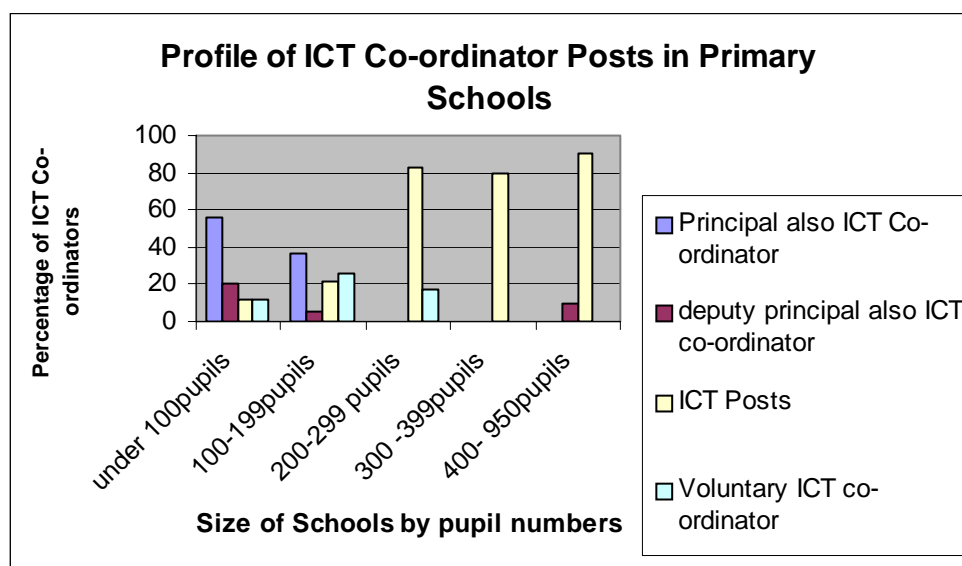


Fig. 1 N=67

The largest schools report that ninety percent of ICT co-ordinators are designated post holders. By contrast in the smallest mainstream schools sixty percent of ICT co-ordinators are principals also.

It may be, as one principal of a small school stated, “*nobody wants the job in our school.*” Another principal, by way of explaining

why nobody had been appointed as ICT Co-ordinator, said, *“Nobody in the school has expertise.”* This phenomenon could give some insight into reasons why principals in smaller schools take on the extra role of ICT Co-ordination even though they are teaching principals also as shown in Fig. 1.

As regards release time from teaching duties, principals sometimes allot some principal release time to ICT matters. (An appointed number of days known as ‘Principal’s Release Time’ are available to teaching principals while a substitute takes charge of their class.)

However, eighty seven percent of ICT post holders report that they are never given release time.

See Fig. 2

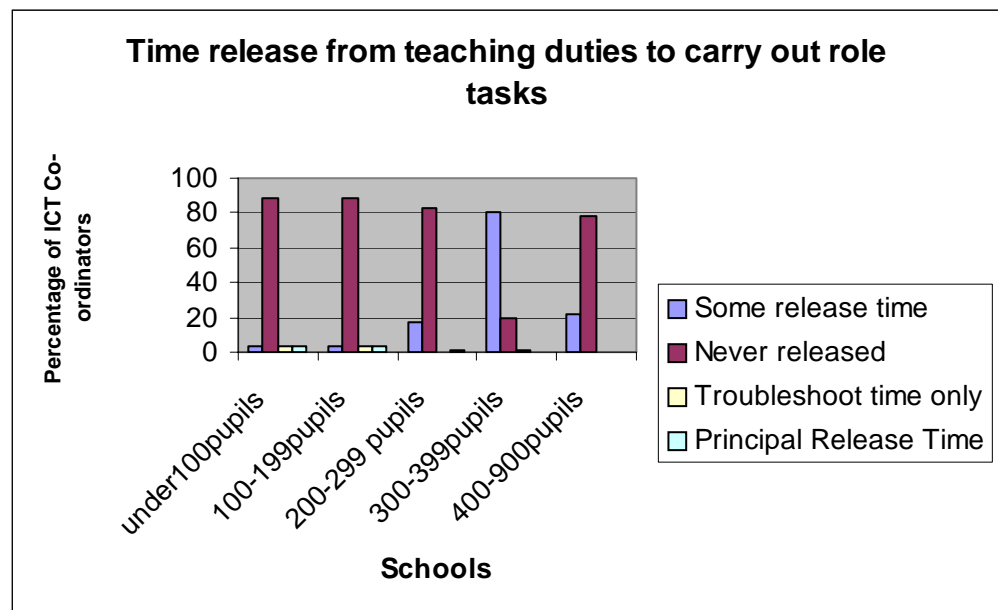


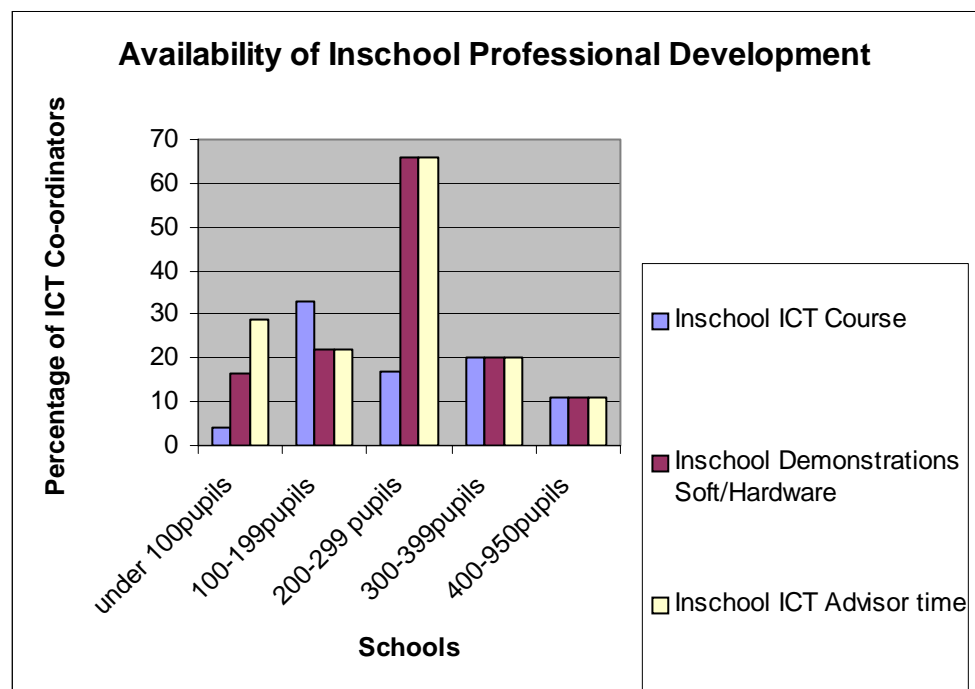
Fig. 2

It is reasonable to presume that time release, or lack of it, as shown in Fig. 2, is a major obstacle to many ICT co-ordinators regardless of school size.

## 4.2 Professional Development

Lack of professional development seems to be another hurdle as shown in Fig. 3. The current research wished to find out if professional development is available during school hours, to teachers who hold the leadership role of ICT co-ordination, and in particular if it is available at a time when they are free from teaching duties.

See Fig.3



**Fig. 3**

Note: In school ICT Advisor time while free from teaching duties.

While a range of existing ICT Professional Development Courses is funded by NCTE, (NCTE/ICT training site), courses are provided after school hours in a school computer room or in Education Centres. Fig. 3 shows that on site training by ICT Advisors appears to be carried out when teachers are not free from teaching duties.

### **4.3 Satisfaction of Post Holders with ICT role**

**It seems remarkable that 22% of those who have role responsibility state that they are satisfied with the current position, while 17% are undecided but the majority (61%) are dissatisfied with the ICT co-ordinator role as it applies to them.**

### **4.4 Performing the task**

**ICT co-ordinators saw role responsibilities as follows:**

- Over eighty per cent of all respondents accept responsibility to oversee computer equipment.**
- Role responsibility for ICT policy planning with the staff of their schools is accepted by over 60% of respondents.**
- Responsibility for demonstrating software use, or otherwise engaging in transfer of ICT knowledge to other members of staff, shows obvious divisions of opinion among respondents. A little over 50% of ICT co-ordinators from smaller schools feel that this is their role. Co-ordinators in larger schools give this activity 100% support.**
- Respondents from larger schools accept responsibility for planning and assisting whole school integrated projects to assist integration into the curriculum. Over half of respondents from smaller schools report this is outside the scope of their role.**
- Responsibility for arranging staff training sessions was claimed by respondents from the largest schools only, with**

as few as one third of the remainder feeling responsible for this task.

- Additional responsibilities claimed by a few were sourcing, purchasing hardware/software and consumables; attending courses and e-learning, international projects and school reports and records; research of ICT developments and evaluation of policies; special needs and providing access for all pupils; health and safety issues; computer room supervision and trying to enable teachers to feel comfortable with ICT.

See Fig. 4

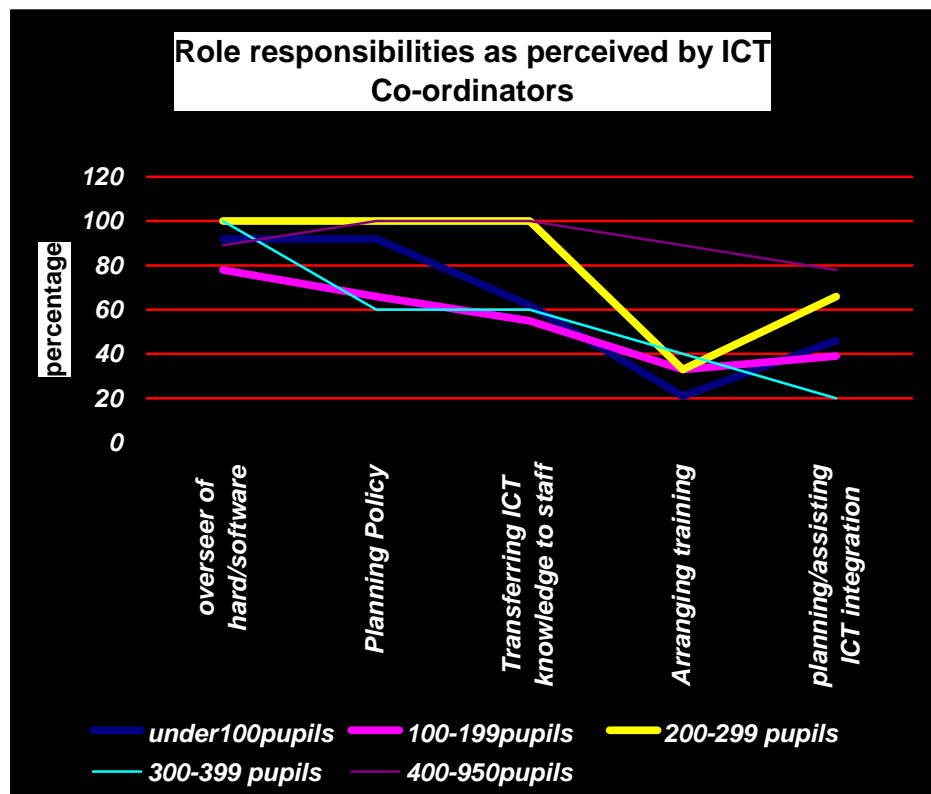


Fig 4

Most co-ordinators, regardless of school size, engage in technical support as shown in Fig. 4, while only the largest schools take some responsibility for training and professional development. This explains the lack of in school training as shown in Fig 3. Role definition could direct ICT co-ordinators expertise away from troubleshooting to the task of integration.

#### 4.5 ICT Co-ordinator - Matching skills with task

Fig. 5 shows ICT training received by teachers, 95% of which was gained in teachers' own time.

Computer skills reported are Phase One, Phase Two and Internet courses with NCTE.

Two Respondents hold academic qualifications to Masters level, one to Higher Diploma level; three hold ECDL Certificates and a small number attended Intel Teach to the Future classes.

Apart from Basic Trouble Shooting courses no respondent had formal technical training.

See Fig 5

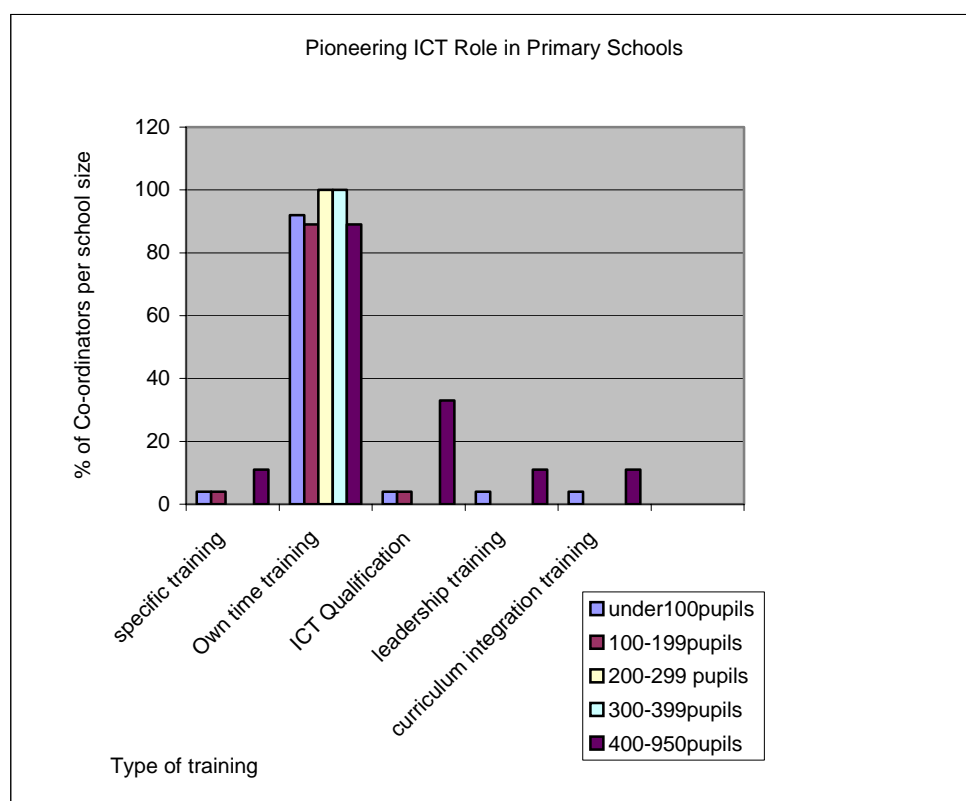


Fig. 5 N=67

Thus ICT co-ordinators attended teacher ICT training in their own time. Four teachers stated that they had received some

specific training as ICT co-ordinator, two of which were reported as being one-day training sessions.

However leadership and curriculum integration training only features in the largest schools as shown by Fig. 5.

#### 4.6.1 Co-ordination of ICT for Integration

ICT co-ordinators are involved in school planning as manifest in Fig. 6. In smaller schools this could be because the ICT co-ordinator is also principal or deputy principal and as such would have an overall planning role in school. Some of the largest schools have designated ICT posts and as Fig 6 shows they have a role in all aspects of school planning.

See Fig 6

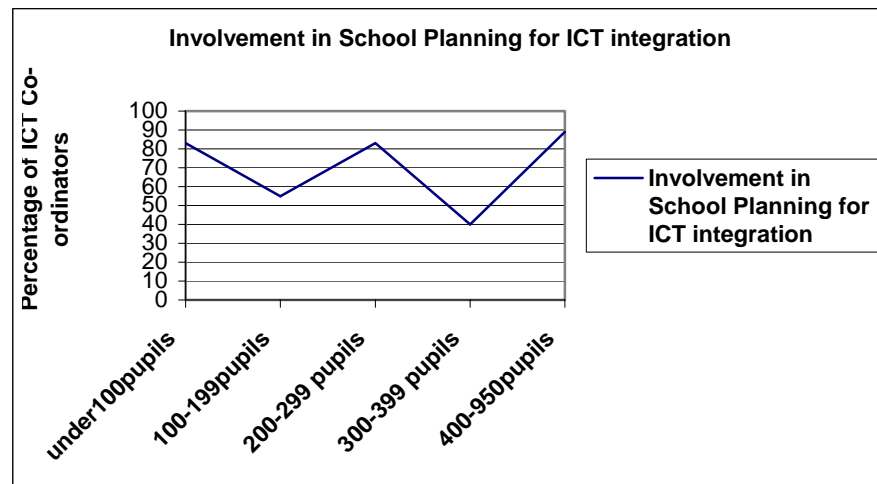


Fig. 6

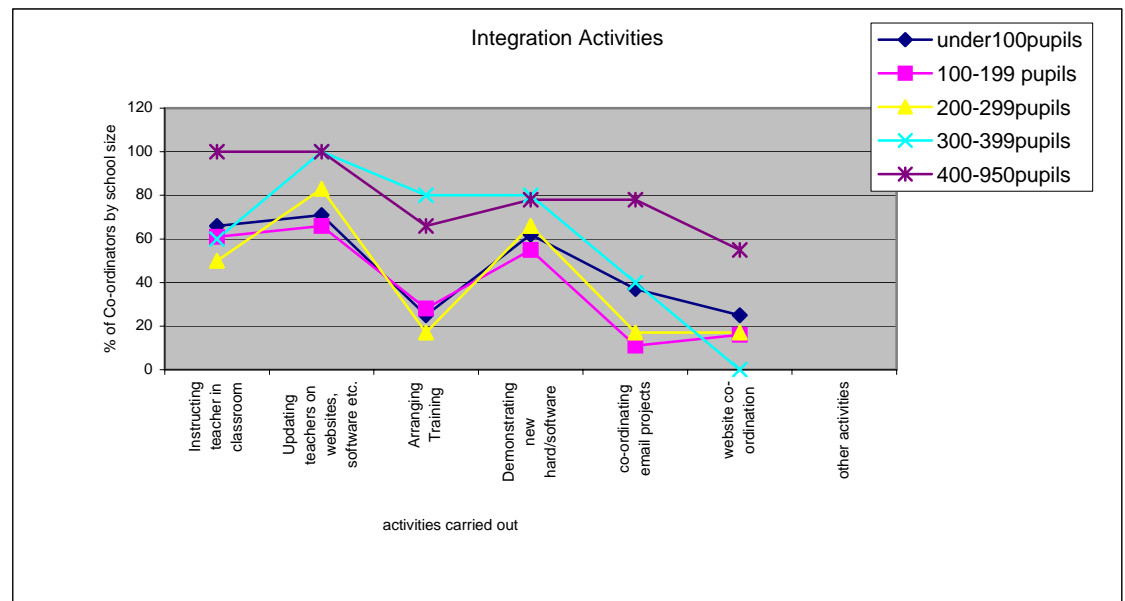
School ICT plans and policies appear to be carried out in schools of all sizes. Looking back to Fig 4, where arranging staff training hardly features in plan or policy, except in the largest schools, it seems that ICT co-ordinators do not feel that this is a role responsibility. Perhaps the lack of role definition of the ICT co-ordinator leads to co-ordinators overlooking this training area.

NCTE in their training website suggest that courses may be tailored to suit specific needs of a group of teachers.

#### 4.6.2 ICT Integration into Teaching and Learning

Respondent ICT co-ordinators as shown in Fig. 7, instruct teachers in the teacher’s classroom, in matters of ICT integration.

See Fig.7



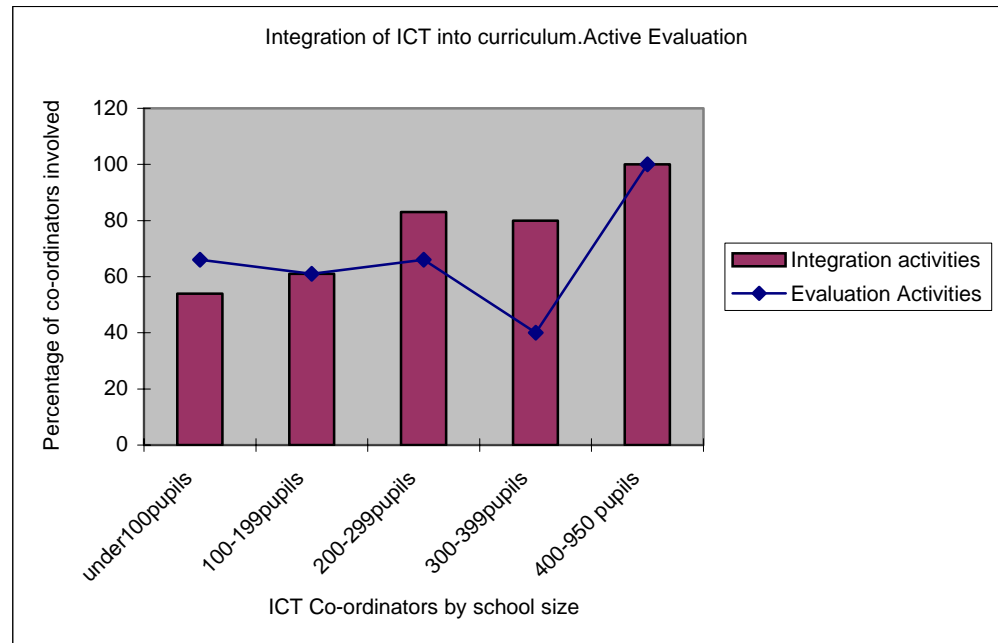
**Fig. 7**

The largest schools are the only ones reporting significant activity (over 50%) in the co-ordination of websites and (over 70%) email projects. It would appear from Fig. 7 that smaller schools do not prioritise Communication in ICT.

## 4.7 Integration and Evaluation of ICT into the Curriculum

Respondents show a gradual increase in involvement in the integration of ICT into the curriculum, from 54% of respondents for the smallest schools up to 100% for the largest schools.

See Fig. 8



**Fig. 8**

ICT co-ordinators showed that they were formally or informally involved in the evaluation of the status of ICT in their schools.

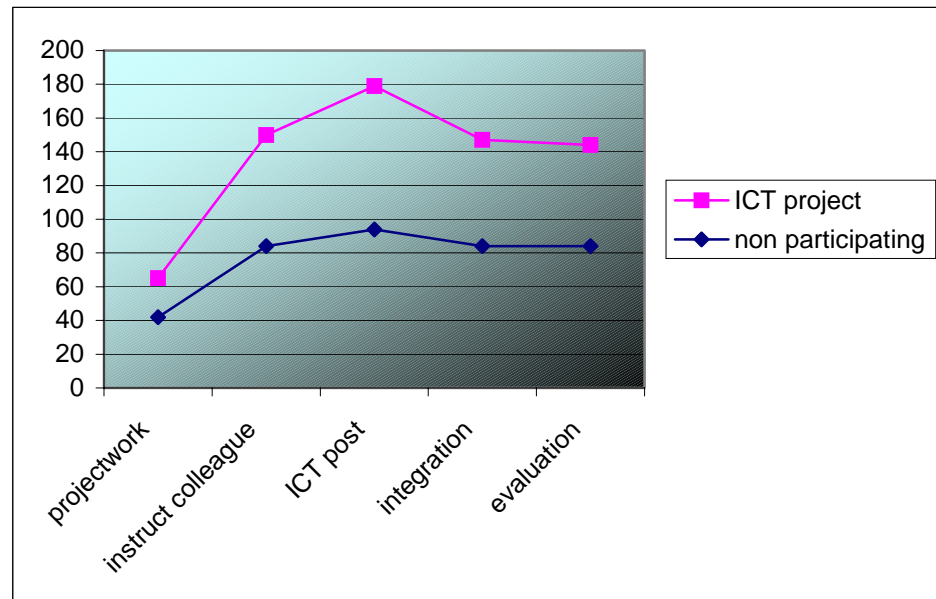
Fig. 8 shows a higher involvement in evaluation, along a similar pattern of gradual increase from 66% of smallest schools to 100% of largest schools.

#### 4.8 Special ICT Projects

Activities undertaken by respondents from schools involved in Special ICT Projects (N=19) since 1999 are compared in Fig. 9 with respondents from non-participating schools (N=48)

Variation in all respondents' schools, as shown in Fig. 9, indicates greater involvement in ICT activities by schools involved in ICT projects.

See Fig. 9.



**Fig. 9**

ICT Project N=19. Non-participating N= 48

These changes push the development of ICT by project schools into the integration stage.

An examination of the findings shows that involvement of ICT coordinators in leading/managing the integration of ICT into teaching and learning is clearly effective. Their involvement in evaluating the extent of ICT integration into teaching and learning within the school is manifest in Fig. 9

## **Interview with ICT Advisors –The Findings**

### **Leading From Within:**

*You are just the person I wanted to see*

**ICT Advisors are often greeted with these words as they arrive in schools. Principals/ICT co-ordinators get in touch with the Advisor to arrange a visit. Advice sought is either for themselves and their own classroom or for other members of staff who are in need of assistance.**

**As one advisor stated:**

*It is in a nutshell; Help me! Or help me to help my colleagues!*

**School principals adopt the ICT role in 80% of schools visited by one Advisor. All Advisors call to the principal first and foremost, then to the ICT co-ordinator.**

**Advisors state that:**

*Co-ordinators are great motivators and are needed to drive the integration of ICT especially the C for communication part of ICT.*

**Advisors would recommend that ICT co-ordinators whether principals or not, be appointed and recognised in each school.**

**In email projects and web quests the level of participation by schools seems to be dependant on active co-ordinators in a school according to the Advisors. ICT tasks are set at a basic level yet all but one of the advisors report only 10% level of participation by schools as:**

*Entries come from ICT co-ordinators, rarely do I see any school I don't know entering.*

**Other factors judged by them to cause low participation are revised curriculum overload, Internet safety issues, problems with connectivity and lack of active email addresses. Their judgement is based on reports from teachers in schools. As expressed by one Advisor**

*There is low computer use –especially that kind of computer use. (Email I mean)*

## **2. Support from Management**

**Visitors to a school including ICT Advisors meet the principal as a courtesy to fulfil protocol.**

**In all reported circumstances where the ICT co-ordinator is not the principal, arrangements are made for the Advisor to visit the ICT co-ordinator's classroom. The ICT co-ordinator assigns work to the pupils, for the duration of the visit. The ICT co-ordinator briefs the Advisor on issues of concern in the school and individual teacher ICT needs. ICT Advisors recommend that the teacher is free to talk to them, but their experience is that this really depends on goodwill, on the part of management. ICT may not be seen as a priority by some school managements.**

**See Fig 3, p45 indicating that ICT co-ordinators are mainly not free to avail of Advisor's time.**

## **3. Time Release**

**Advisors observe that teachers in small schools have no option but to assign work to their class, and continue to supervise them, while listening to the Advisor. Where the school is large enough (8**

teachers) to have an administrative principal or a learning support teacher, reciprocal arrangements between teachers are possible to free the class teacher. One Advisor rated these two settings as happening on a 50/50 basis in his experience. Another stated that 95% of visits are to classrooms where class is ongoing.

#### **4. Professional Development Opportunities**

When the ICT Advisor is required to visit a school s/he is given an indication of staff needs. Needs reported by all interviewees (33% of total pop.) show that principals/ICT co-ordinators require (not in any order of priority):

- information on current issues i.e. Internet ISP or broadband access, or special needs issues;
- Advice on administrative issues of purchasing, infrastructure and planning for integration;
- Training or demonstration in the use of networks, peripherals and/or software;
- Advice on using ICT equipment and peripherals they have got i.e. cameras, data projectors, scanners;
- Queries on the use of content free software to integrate with teaching and learning. Add-ons for content rich software for special needs;
- Classroom management issues, especially where group work is not standard practice;
- Reassurance that they measure up with other schools in ICT integration and advice on how to improve their skills and work practices in order to keep pace.

**Response to these needs, as reported by ICT Advisors, takes various forms of professional development, in groups or in a one to one basis where teachers are:**

- **advised about relevant ‘good’ Internet sites;**
- **advised about other schools sourcing ICT equipment by s who might share their experiences;**
- **given demonstrations in use of peripherals or software;**
- **shown examples of project websites using the ICT tools in question;**
- **given demonstration in the use of PowerPoint, or Excel with emphasis on its use as a teaching tool;**
- **classroom management issues are dealt with, where there is only one computer in the classroom; i.e. use of a data projector to allow simultaneous input from the whole class;**
- **support for ICT projects is given and recommendations are made about useful tools to enhance teaching and learning;**
- **training or advice is given in the classroom or in a computer room, to one teacher or to a group if the situation allows.**

## **5. Satisfaction with the role of ICT Co-ordinator**

**Interviewees see this role as mostly an added responsibility for a post holder or a voluntary position for which there is no monetary compensation; ‘a type of limbo’. What is surprising is the fact that ICT Planning, NCTE (2002) states that ‘advanced schools’ have an ICT co-ordinator, though no official recognition is given to this person in the form of professional development.**

## **6. Evaluation**

**The involvement of ICT Advisors in evaluating the extent of ICT integration into teaching and learning is they say, advisory rather than inspectorial.**

**One Advisor states:**

*Our relationship with school principals and staff is seen as a good source of advice and training and it is free. We are the only ICT service really. Calls are requested. Increasingly schools are aware of the benefit and we are busy. This is a sign that the role is important, helpful and encouraging to teachers in schools.*

**Another Advisor states:**

*Our visits are non-threatening; we're here to help solve a problem and to give advice. If we were ever to become an arm of the DES, appraising, checking up, reporting, it would ruin our input.*

**ICT Advisors visit a school, assess the level of advice /help required and give the appropriate response to the principal /ICT co-ordinator. While advisors make no official evaluation on any individual school their role enables them to observe at first hand how the ICT tool is being used in teaching and learning. This observation enables them to pinpoint which kind of assistance is needed to encourage teachers to make further use of ICT on a need to know basis. If this involves demonstration of a piece of software or installation of new software for digital media then there is no delay for the teacher, as advice is at hand. ICT Advisors believe that this evaluation, implementation, and review of a tool, in the duration of one visit, can be a great confidence**

**boost and motivation for a class teacher to try to integrate ICT into teaching and learning.**

## **7. Change**

### **A. Administration**

**Among the changes advocated by Advisors, reducing the burden of paperwork to allow valuable time to devote to schools, tops their list. While remaining in the office to do paperwork they give advice over the phone. One advisor decries this type of advice as “*totally generic*” and contrasts this with a school visit where:**

*you can give much more pertinent advice.*

### **B. Technical Support**

**Advisors would wish to formalise technical support for schools by designating a contract technician to each Education Centre. They see this as a major support to ICT co-ordinators in keeping the ICT tool in use, as well as being cost effective for schools.**

### **C. Funding for Projects**

**Advisors also see project work as the way forward for integration of ICT. More funding for projects, which could encourage more schools to participate in ICT activities, is high on their agenda for change.**

**In this chapter responses to the questionnaire were examined and set out and the findings reported under**

- 1. job description,**
- 2. professional development opportunities,**
- 3. time release,**
- 4. satisfaction of post holders,**

5. tasks performed,
6. IT skills and qualifications,
7. school planning for IT integration,
8. planning and evaluation of integration of ICT into teaching and learning.

Data from the interview and ideas for change, put forward by interviewees, was dealt with under the same headings.

In chapter five, the findings will be discussed to gain an insight into emerging issues surrounding the role of ICT co-ordinator, and ICT integration in primary schools.

## **Chapter Five**

### **Discussion**

**The previous chapter gave a detailed description of the main findings of the questionnaire survey, which was designed to investigate the emerging role of the ICT co-ordinator and the effect of that role on ICT integration into teaching and learning in primary schools in Ireland. Data from interviews with ICT Advisors was outlined to give their perspective of ICT co-ordinators' role in primary schools.**

**(See Appendix 9)**

**In this chapter discussion will focus on the current implementation of responsibilities of this role as perceived by respondents to the questionnaire. Data from interviews with ICT Advisors, who advise and assist them in their role of ICT co-ordinator within the school, will be included to extend the discussion and triangulate the findings.**

#### **5.1.1 Emerging issues**

**Emerging issues surrounding the role of ICT co-ordinator are:**

- 1. Lack of official recognition of the role of ICT co-ordinator.**
- 2. Involvement of ICT co-ordinators in the amount of ICT integration that is taking place at primary school level in Ireland.**
- 3. Lack of professional development for ICT co-ordinators. Teachers have taken responsibility for personal ICT training in their own time to inform and update them in the responsibilities of this role. Training for ICT co-**

ordinators involves gaining basic level ICT skills though some have followed through to gaining postgraduate qualifications.

4. Lack of official support and recognition, by way of time release from teaching duties, to plan for and perform the task of integrating ICT into schools.

Results of this research are about current circumstances of ICT co-ordinators and their role in school based technology implementation at primary level. The findings outlined in Fig.4 and Fig 7, (Chapter 4) suggest that perhaps they spend much time on technical support, to the detriment of ICT integration. They do this without specific training for the role or a reduction in teaching duties time.

These areas are important for discussion, as the role of the ICT co-ordinator is significant, to the work of every primary school staff, involved in integrating ICT into teaching and learning of The Primary School Curriculum (1999). In literature, the central role of the ICT co-ordinator is supported by many authors (Smeets and Mooij (1999), citing Morgan G.P. (1998), Kincaid and Feldner(2002), Reynolds and Treharne et al., (2003).

#### **5.1.2 Official Recognition – identity crisis**

Within the staff of a primary school when ICT is on the agenda, topics discussed vary widely from one school to another. In one school the topic could be as technically advanced as arranging funding of pen drives for teachers, to encourage home and school use, as reported by one respondent:

*Of late we have offered to pay 50% of cost of pen-drives for teachers – as they will be used for home and school use – much appreciated by staff.*

**In another school' the topic could be as basic as the problem described by another respondent who stated that in his ICT role it is:**

*a matter of how I can make myself available if something goes wrong in the computer room during the day while a teacher is there with a class.*

**Reports in Literature researching ICT in Irish Schools associates four factors with higher ICT use in schools. (Mulkeen, 2001) One of these factors is the presence and status of an ICT co-ordinator. Several authors support a need for the influence of an ICT co-ordinator in schools. Smeets and Mooij (1998), Kajlert (2001), Reynolds, Treharne and Tripp (2003).**

**This current research concurs with a need for an ICT co-ordinator and is also supported by ICT Advisors who claim that a proactive ICT co-ordinator:**

*Definitely has a positive effect in schools. They establish the importance of ICT and its role in the whole process in the school. An active co-ordinator as opposed to someone with little interest establishes the importance of ICT and that it has a supportive role (in teaching and learning).*

**(See Appendix 9)**

**ICT Advisors visiting schools report that they meet:**

*The Principal and the ICT Co-ordinator or whoever is in that capacity.*

**Or quoting another ICT Advisor:**

*It can also be the Chairperson of the Board of Management, the local Parish Priest -anyone with an interest in ICT in schools.*

**While yet another ICT Advisor meets:**

*Principal, ICT Co-ordinator, Learning Support teacher, Special Needs Assistants, I would deal with school secretaries on occasions.*

**It seems a difficult task to distinguish who might be ICT co-ordinator in a school, a situation that suggests that the role is seen as unimportant. This needs to be discussed to see how it occurs and how the problem can be addressed.**

### **5.1.3. How do Teachers become ICT Co-ordinators?**

**Posts of responsibility are a feature of middle management in primary schools. Boards of Management allocate responsibility to post holders for an administrative area according to the perceived needs of the school. Apart from the post of Principal, none of these posts are given substitute cover to perform the duties of their post. However, post holders are paid an allowance.**

**This current study finds that in larger schools where staff and pupil numbers are high, schools are more likely to allocate an increasing number of ICT posts of responsibility.**

**(See Fig. 1 Chapter 4.2)**

**Nevertheless appointments of this nature may be due to other factors such as the vision and level of interest the Principal has in ICT for instance. Larger schools seem to have the benefit of more support for ICT from management thereby making the post of ICT co-ordinator more attractive, especially for volunteers.**

**(See Fig. 2 Chapter 4)**

**One respondent who is ICT co-ordinator in a large school, claimed that ICT is ‘not seen as centre stage worthy’ in the school yet. As evidence of this, the post holder reports that s/he has a post of responsibility in another unrelated area within the school while co-ordinating ICT as well. Meanwhile, in the same school, other teachers have posts, which include ICT duties, such as the purchase of ICT consumables.**

**The lack of an ICT co-ordinator in a school is more easily explained. ICT role seems to come lower down in priority when assigning a post of responsibility? Could it be that in some schools there is no available (or voluntary) qualified teacher willing to accept this role? Telling evidence of the problems with this role is the fact that 68% of questionnaire respondents declared they are unhappy with the role as it now applies to them. ICT advisors sometimes see the ICT co-ordinator role as:**

*a voluntary position for which there is no monetary compensation, ‘a type of limbo’.*

**Another respondent who is a Principal teacher of a medium sized school, reported that ICT was proposed, among others, as a possible duty for a new post being allocated in the school. ICT was not the duty they eventually decided to proceed with, as other areas were a higher priority with management.**

**Study of data from the respondent ICT co-ordinators shows that, the emerging role of ICT co-ordinator in primary schools is that of a class teacher, who has the added responsibilities of an ICT role, with no reduction of class duties. These responsibilities are to be carried out whenever time allows or can be found. Pelgrum (2001) reports this second task for ICT co-ordinators is common throughout Europe. Kwok et al (1999), in Hong Kong, also found no reduction in teacher duties for teachers assuming ICT co-ordinator roles. The current researcher agrees with the suggestion that Kwok et al (1999) make to improve future**

development, namely clearer definition and guidance for their role. This solution could be applied to the situation in Ireland. It would also be necessary to include appropriate recognition of skills and time involved in carrying out the responsibilities of their role.

(See Appendix 4 BECTa 2003)

#### **5.1.4 Integration and the Present Role of ICT Co-ordinator**

The emerging role of ICT co-ordinator is at best a post of responsibility, held by a mainstream teacher, who has full time role of assisting other members of staff and their pupils with their efforts to integrate ICT into their teaching and learning. At worst it is a mainstream teacher who has a role of assisting other members of staff and their pupils with their efforts to integrate ICT into their teaching and learning, as well as duties as a full-time class teacher. There are few variations in between. Only two respondents from very large schools reported that they had full time positions free from regular teaching duties, with one of the two stating that this situation is winding down at the end of this school year:

*I teach all classes in the computer room and coordinate with class teachers to integrate ICT. The teachers come with their classes so they can learn also. While I am responsible for the computer room and teaching in it, another teacher holds the ICT post, which covers maintenance of computers outside the computer room. Next year I will be teaching a class, so the post will not be full time. Maintaining the network is quite specialised and would be very onerous if it were to be done outside teaching hours.*

**In this scenario, staff members lose a full time ICT teacher who has reverted to being a full time class teacher. This new situation is perhaps more conducive to integration of ICT into the school, when teachers take responsibility for the integration of ICT with their own classes. To do so without the assistance of the ICT co-ordinator, on whose expertise they have relied on to date, would be difficult.**

**Another full time ICT computer room teacher explains that each class in the school gets one hour per week using two half-hour sessions to accommodate the whole class. This causes supervision and timetabling difficulty for the class teacher who is not free to accompany either half of the class to the computer room. From an ICT point of view, according to the co-ordinator, the negative side of this arrangement is the difficulty of:**

*Trying to change attitude (of teachers and pupils) from the perception that ICT is an 'extra treat,' to the idea of using of ICT as a tool for learning. This makes it more difficult to make teachers comfortable with ICT use.*

**A computer room class, being taught by a full time ICT teacher, rather than by their full time class teacher is not the norm at primary school level in Ireland. The DES does not authorise schools to divide one ICT teacher's class between remaining teachers to free one teacher to full time computer room duties, as in the two aforementioned cases. There are several studies that have investigated this computer room versus classroom computers argument. The researcher believes that computers are classroom tools that should be available to pupils and teachers when needed. ICT Advisors also make the point that one of the most helpful changes towards using ICT to its full advantage that could be made in schools would be, to quote one interviewee:**

*To ensure that the hardware is set up in each classroom, and that the teachers are prepared, as opposed to starting the lesson and finding that the software is not working. I think it would be easier to encourage a teacher to do so if he/she knew that the equipment was there and ready to use and that there would be no time wasting.*

**There is no doubt in the researcher's mind that this is an authentic example of obstacles to ICT integration in schools. Teachers are not technicians and are fearful of the hardware/software failing to deliver during a lesson. If teachers are left to fend for themselves with this tool in a classroom or computer room with no back up then there is no choice but to revert to traditional teaching methods. This way at least the lesson gets delivered and on time. ICT co-ordinators could support such teachers and plan to have technical support plan in place.**

#### **5.2.1. Home Grown Model**

**NCTE in its six point ICT Plan Outline does not mention procedures or plans for the appointment of an ICT co-ordinator. Yet point six, is designated to the role of the ICT Co-ordinating Teacher and it lists:**

*the duties that should be considered when defining the role.*

**(NCTE, 2002, p31)**

**Currently ICT guidelines supplementary to the Primary Curriculum Books are being issued to all schools and to all teachers in the form of a CD. On the subject of planning the definition of an ICT co-ordinator is clearly a matter for each school management, as stated in the guidelines:**

*Where there is an ICT Co-ordinator, (perhaps a post holder) his or her role should be outlined in the school's ICT plan. All school staff should have a clear understanding of his or her role.*

(NCCA, 2004, p20)

Clearly, role defining is left to individual schools. If a role is defined, then it is recognised and it follows that it must be funded. NCTE may wish to avoid defining co-ordinator duties, for similar reasons as that which happened in the United States where:

*In one state it was felt that if they fund technology coordinator positions, they would have to create specifications for the technology coordinator position, and this would be contrary to their desire that districts be creative and flexible in how they implement technology.*

(Casson, L., Bauman J. et al website [accessed 22/09/2003])

In Ireland the inverse may be the case, where role definition would lead to recognising the role and an obligation to fund the recognised role of ICT co-ordinator.

Literature finds this local homegrown model also supported by Carter and Burger (1994), who propose a locally crafted model of ICT co-ordinator:

*in order to capitalise on local talents with local insights in order to meet local needs.*

(Carter and Burger, 1994, p158)

The present researcher believes that this method of co-ordination has some merit insofar as it produces local solutions for local needs and allows room for innovative local practices in integrating ICT into teaching and learning. This practice in turn may be

shared with similar schools. This is not enough, as just meeting local demands does not fulfil school needs. Schools no longer exist in isolation. ICT Advisors state that having a proactive co-ordinator, who motivates colleagues and keeps the ICT integration show on the road, is a great advantage for that school.

Thus, where the school principal has not been convinced that ICT is a necessary tool for teaching and learning the school, the pupils and teachers experience school in an ICT free environment. ICT Advisors do not canvass such schools as they feel that ‘conversion has to come by other means’ and their brief is to answer calls from schools that request their advice. Schools seem to be free to choose whether or when to use ICT as a tool for teaching and learning.

Drucker’s (1999), observations of the teaching profession provide a framework to understand teachers’ current situation in Ireland:

*The vast majority of teachers, lecturers and researchers are recruited into education to teach rather than to manage or administrate....By definition teachers are knowledge workers.*

(Sallis, 2002 citing Drucker, 1999, p119)

According to Druker (1999), knowledge workers are more concerned with being effective than counting the hours of the working week.

Salis (2002), believes that while the responsibility of a ‘Leading Knowledge Worker,’ whom he calls ‘Knowledge Champion’ (corresponding with our ICT co-ordinator) is more important, than the title of the post, such a person is:

*Needed to encourage ideas and projects and motivate others to take part. Most importantly they have a role in building up and supporting knowledge communities*

(Salis, 2002, p41)

The present researcher agrees with this finding and believes that teachers who are motivators require further leadership and peer mentoring training when assuming the role of ICT co-ordinator. One of the findings of the current study is that teachers need professional development to manage the change from serving solely as class teacher to that of managing the role of ICT co-ordinator.

See Fig 3 Chapter Four, which illustrates the difficulties ICT co-ordinators experience, in availing of professional development, to assist them in their role.

### 5.2.2 Professional Development for ICT Co-ordinators

In the U.K. BECTa (2002), identifies ICT co-ordinator's role as one of clear strategic leadership and management. Evidence of personal professional development is one of many desirable attributes for an ICT co-ordinator according to BECTa's advice for the appointment to this post.

Literature supports the need for professional development for ICT co-ordinators where the role may:

*mean different things in different schools, ranging from an active change agent to a token responsibility.*

(Mulkeen, 2001, p9)

Mulkeen (2001), stresses that the aim of such professional development, is to enable ICT co-ordinators to promote the use of ICT in schools:

*An emphasis on courses that build a vision for the use of ICT is more likely to bear fruit than a focus on short and purely technical courses.*

(Ibid., p14)

**There are various other studies that support the need of teachers to access professional development such as Lynch (1999), Delhaxhe, Arlette et al. (2002), Kajlert (2001). Judging by responses in the professional development section of the questionnaire in the current research, the availability of professional development to ICT co-ordinators in primary schools seems almost non-existent. No course is specifically provided for their role. ICT Advisors who organise professional development ICT courses report that they do not target ICT co-ordinators specifically for courses in ICT co-ordination. Advisors report that they have requested the endorsement of NCTE for such courses, without success. As there is only one ICT co-ordinator per school, a cluster of at least ten such post holders would need to be targeted to attend such a course. This would not be cost effective and therefore would not be sanctioned. One Advisor sums it up thus:**

*There is not any course or any booklet for ICT Co-ordinators in schools. I would see this as a lack.*

**Another Advisor regretted that although there may be hope for a follow up course for ICT co-ordinators, he reports that:**

*Unfortunately this has not happened to date.*

### **5.2.3. Leadership**

**This study finds that ICT co-ordinators are change agents and leaders in the field of ICT. Their tasks are many and varied demanding many leadership skills, as they provide solutions to problems that arise, as well as planning and evaluating for whole school ICT integration. Literature also supports their need for leadership skills Kincaid and Feldner (2002), Mulkeen (2001).**

The current research reveals that ICT co-ordinators would support specific training to train them in classroom management and whole school infrastructure management. From experience, the researcher believes that leadership and social management skills could be added to this training schedule in order to better understand their role.

The present researcher believes that managing change is a leadership role that needs many leadership styles especially, for the ICT co-ordinator who is in a middle management position. Many studies have shown that leadership in this ICT role is complicated Reynolds (2003), Mulkeen (2001), Demetriadus (2002), Casson et al. (1997), Bacon et al. (1997), and Implementing ICT “ Leadership and Coordination.” website, (Naace, 2002).

If the post holder is also principal or deputy principal then s/he is already accepted by staff as a member of management with a leadership role.

If not, then here is a very different perception of the level of leadership. It is more akin to change management of a complex nature. It can be a tier of management that is bi-directional, from the middle tier, and therefore demands a great deal of skill and diplomacy, in a hierarchical situation. Literature recognises this need for:

*strong-delegated leadership by technology co-ordinators.*

(Casson et al., Making Tech Happen site, Chapter 8 p1)

Delegated leadership in an area of social change can be problematic. Mentoring colleagues is a challenging factor; hence teachers feel that their leadership skills are not adequate for this adult mentoring role. Most ICT co-ordinators would appreciate an opportunity for professional development, to enable them to relate to colleagues, as adult learners. One respondent to the questionnaire declared:

*I am reluctant to set myself up as an expert among colleagues. It is a matter of deference to their professionalism.*

**Another respondent confirmed:**

*I tell them how it is done and then I let them get on with it. It is not my job to evaluate their work.*

**Yet another respondent disclosed:**

*I know I should tell them to read the manual but I read it for them and then explain to them how it works. Am I crazy or what?*

**Training for this leadership role, in the current researcher's view, is essential. ICT co-ordinators have to cope with change in teaching methods as well as educational principles and classroom management. Experience throughout this research supports this idea of the need for leadership in ICT integration in schools:**

*Building-Level Leadership is Key. It was clear from our interviews that technology implementation is much easier when there is robust and active building leadership, either in the form of a principal, technology coordinator, fired-up teacher, or media specialist. These leaders not only need to paint the future vision, they also must empower those doing the grunt work of implementation.*

**(Casson et Al, Making Tech Happen, Site)**

**From this current research the emerging picture of ICT in schools shows that access to ICT tools for learning is in place in primary schools regardless of size and location. This study also shows that follow up planning and implementation of ICT integration to**

enhance teaching and learning seems to be underway albeit at different levels and varying speeds according to many variables. See Fig 7. Chapter four displaying the amount of ICT integration activities taking place in respondent schools.

This varying degree of integration taking place seems to arise from individual ICT co-ordinators, in isolation, servicing integration needs of their school by matching the needs of curriculum, staff and pupils, with custom built solutions on a need to know/ just in time basis. Respondents say that this is determined by:

- availability of equipment,
- flexibility of the timetable,
- availability of in school ICT Advisor advice.

The findings of this study indicate a need for further research into the role of the ICT co-ordinator by investigating the ICT background and professional development of teachers who are asked to carry out the duties of this role.

### **5.3 Conclusion**

The role of the ICT co-ordinator is evolving in primary schools countrywide, performing at various stages of ICT integration, and with diverse levels of professional development. The degree to which ICT is being adopted in schools seems to hinge on the level of support from management and the amount of professional development teachers can avail of.

The isolation factor arising out of the dearth of professional development courses for ICT co-ordinators seems to promote a lack of confidence in some co-ordinators, when it comes to mentoring colleagues. ICT co-ordinators seem to be seriously hindered by lack of technical support and by lack of discrete time

**to carry out their role. This seems to create difficulties for many co-ordinators to function effectively.**

**It appears to indicate a lack of priority or lack of support for the role.**

**ICT co-ordinators in schools, find that ICT Advisors are very proactive in providing a lifeline to schools and are very supportive of teachers in their efforts to integrate ICT into teaching and learning in schools.**

## **Chapter Six**

### **Conclusion**

#### **6.1 Introduction**

**This study set out to evaluate the role of the ICT co-ordinator in the integration of ICT into teaching and learning in primary schools in Ireland.**

**Specifically the researcher sought to find out if the profile of the emerging ICT co-ordinator role, is that of an overseer of computer equipment, or is that of a promoter of cultural change to active integration of ICT into teaching and learning, or both. The researcher also sought to find out how ICT co-ordinators perceive their role, if they feel supported, in terms of specific professional development, and likewise if they experience support from management. The research also focused on the perception of ICT Advisors arising from their reciprocate dealings with primary school ICT co-ordinators.**

#### **6.2 Support for ICT**

**In chapter two the literature review revealed that a policy of integration of ICT into education exists in Ireland, as it does in most countries throughout the EU.**

**There appears to be a broad consensus on the need for ICT co-ordinators in schools, but there is a disparity of opinion on the need for pre-service and in-service professional development for teacher/ICT co-ordinators. Data collected from primary schools in Ireland indicates that there is a bottom up approach to ICT integration, with schools moving at their own pace. It is clear from data from respondents to the questionnaire and from ICT Advisors that ICT co-ordinator's role is gradually evolving in schools regardless of size or location. The role appears to be defined by school needs, and to have varying degrees of support from school management. There are ICT courses available for**

**teachers in general but there is no specific professional development course for ICT co-ordinators.**

**Recommendation: School management should support teachers who assume responsibility for ICT integration, or who are given posts of responsibility in ICT in their schools. This support needs to be twofold, in the form of requisite time release from classroom duties, to carry out their tasks, and opportunities for real and meaningful professional development. The latter may perhaps be provided in the form of personal post-graduate, certified ICT courses, which give greater insight into the pedagogical reasons for integrating ICT into teaching and learning. This could require some financial investment, but it would mean that ICT co-ordinators would gain overall competency in the field of ICT integration into education. This would be a rational follow up to the investment that has been made in skill training and the purchasing of hardware. There is ample evidence in literature to show that integration of ICT is not guaranteed by providing hardware and skill competency. Professional development needs to be adapted to the needs of teachers. ICT co-ordinators in schools are well placed to identify those needs. Literature shows many researchers have found that management and leadership skills seem to be essential to this post. Based on classroom and project leadership experience, this researcher would fully endorse the need for leadership skills. This experience also taught the current researcher that teachers in Ireland traditionally have high regard for the professionalism of colleagues. The culture of social change that is involved in the integration of ICT into teaching and learning necessitates classroom visits and intrusions that would heretofore, be unprecedented in primary schools. Skilful proactive leadership on the part of the co-ordinator could make the difference between, creating a culture of ICT integration in a school, or fuelling a climate of intolerance of ICT integration among colleagues who may see ICT visits as an intrusion into their**

classroom. A high level of leadership competence and sensitivity is required in this situation.

### **6.3 Time Release**

Time seems to be a major obstacle to planning and a particular obstacle to implementation. In schools where respondents report that planning for ICT integration has taken place it seems that enough time cannot be found to carry out the plans.

(See Fig. 6 chapter four)

Planning is an essential task, but it is a process that should lead to implementation, which is the object of planning in the first place. Michael Fullan (1992), is one of the leading researchers of school change in our time who introduces the idea of the 'daily press' to describe the reality of needing to take care of the ongoing everyday tasks in any school day. The current researcher identifies with this dilemma where there is a daily emphasis on coping with the present needs of classroom timetables and routines, restricting opportunities to reflect on implementing change. Several authors have reported that lack of time is one of the major obstacles to ICT integration in schools.

#### **Recommendation:**

(a) Time release from teaching duties is already in place for teaching principals. Principals, within this timeframe, should allocate an amount of block release time for ICT co-ordination. Indeed, a small number of respondents suggested that this arrangement is in place, for technical support of colleagues, in their schools. Putting a technical support contract in place should cater for this need. Release time could be used in a more beneficial way, if it were used for planning, implementing and integrating ICT into the delivery of the curriculum. ICT time could further the integration of ICT in schools by affording the co-

**ordinator valuable time to visit colleagues in their classrooms giving on the spot support at the vital point of implementation of ICT. The release time could also be valuable to the co-ordinator to evaluate the exact state of play with integration in their school, and to discuss ICT matters with colleagues towards developing a culture of change. The outcome could provide a solid base on which to build the necessary scaffolding for the integration of ICT to enhance teaching and learning in their school.**

**(b) School Management should in the short term provide sufficient opportunities for ICT co-ordinators to meet ICT Advisors or engage in online ICT courses, by arranging block release from teaching duties for a fixed number of hours per period of time. This could give an incentive to teachers to accept and develop a positive and proactive ICT co-ordinator role in their school. It would also provide much needed quality personal and professional development. The current researcher can testify, that the root and branch renewal that is provided by this type of activity, considerably enhances the ICT co-ordinator's ability, to work towards the integration of ICT in the school.**

#### **6.4 Policy**

**This study is aimed at policy makers as well as administrators Policy makers could do much to enhance the integration of ICT in schools by tapping into the apparent vision and intrinsic motivation of ICT co-ordinators in primary schools. Teachers have insight into the ethos that is the social culture of their school. Heretofore, whole school activities were confined mainly to sport and the arts. Classrooms traditionally were isolated timetabled units of graded, age appropriate, teaching and learning; that is until ICT was introduced. As stated in the literature, boundaries are dissolved, and teamwork is dissipating the feeling of isolation.**

**ICT makes whole school collaboration in curricular or cross-curricular subjects possible.**

#### **Recommendations**

**(a) The impending introduction of Broadband to all schools in 2004 envisages networking and so would be an opportune time to formulate policy to ensure that fully supported and trained ICT co-ordinators would be at the service of all schools. The giant leap required, in terms of ICT, from the introductory stage as identified by NCTE (2000), to the full use of Broadband facilities could be a huge disincentive for schools to integrate ICT. The DES, who plans to connect all schools to Broadband by the end of the current year, should consider a defined post of responsibility for ICT co-ordinators following the UK model. The co-ordinators should be afforded the necessary professional development to make maximum use of their knowledge. ICT Advisors, who have a very broad geographical spread and a limited travel budget could also benefit from a policy change. The ICT Advisor's valuable input in schools would be nurtured by knowledgeable co-ordinators who would have time, expertise and support to build on the contribution to ICT integration that the visit of the advisor makes.**

**(b) Policy makers at national level should regard ICT integration as a social change of a whole-school culture from individual ploughing of lone furrows, to whole-school cross-curricular collaboration. This is an evolutionary process requiring a chain of events that is typified in the workings of projects. ICT Advisors favour the use of projects to achieve that gradual change to integration. The current researcher agrees with this idea having experienced the motivating factors of such projects. The services of supported ICT co-ordinators should be available to all schools to lead such ICT integrating activities.**

**(c) Policy makers would also need to recognise that the early adopters have led the field in ICT integration through specialised projects as in SIP and others. There is a different policy needed for the so-called late adopters. It seems to this researcher from experience, as ICT tutor and as a teacher in the classroom that the late adopters only wish to have ICT tools if they can see that they are superior to their present modus operandi. Above all, late adopters are late adopters because have yet to be convinced that ICT is a reliable trouble free tool. This is where a challenge lies for policy makers and for ICT co-ordinators in schools. ICT co-ordinators should not be technicians, though data from respondents belies this. Administrative policy could assist greatly by ensuring that a proactive technical support system is in place, outside the ICT co-ordinator role.**

## **6.5 Conclusion**

**As this study has found early adopters could cope through their motivation and interest in ICT, and due to the support, which they received, from each other through their involvement in email. They coped for the most part, without technical support and simply needed leadership and advice to assist the integration of ICT into education. However, the remaining late adopters need convincing that ICT is a worthwhile and workable tool for teaching and learning. A different approach is needed which draws upon the experiences and expertise of the early adopters. Centralised schemes should be put in place making laptops or computers available to teachers, thus providing a means of communication with a support network, perhaps in the form of peer support from early adopters. This could encourage teachers to familiarise themselves with the benefits of ICT into education, and would be a positive step.**

**Quoting Sallis (2002) on the need for knowledge management in education:**

*Staff with busy professional lives need help to develop in a new field and may not have time to drive a project themselves.... When staff asks questions about how to develop this difficult subject called knowledge, someone needs to listen to them.*

**(Sallis and Jones, 2002, p42)**

**That someone is surely the ICT co-ordinator. Thus, there needs to be recognition of the role of ICT co-ordinator within primary schools - a defined role with all the necessary resources and support to answer those questions satisfactorily. This study has examined closely the current situation with regard to the role of the ICT co-ordinator in primary schools in Ireland. As with most research the researcher recognises that more work is needed, in order to better understand the role of the ICT co-ordinator as it effects integration of ICT into teaching and learning. However, the researcher believes the work carried out in this study has provided an accurate snapshot of the current situation, and hopes that it will act as an impetus for further study in this area.**

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## **ACRONYMS**

<b>BECTa</b>	<b>British Educational Communications and Technology agency</b>
<b>CESI</b>	<b>Computer Education Society of Ireland</b>
<b>DES</b>	<b>Department of Education and Science, Ireland</b>
<b>DfES</b>	<b>Department for Education and Science U.K.</b>
<b>EU</b>	<b>European Union</b>
<b>Eurydice</b>	<b>The Information Network on Education in Europe</b>
<b>ICT</b>	<b>Information and Communications Technology</b>
<b>INTO</b>	<b>Irish National Teachers Organisation</b>
<b>Naace</b>	<b>National Association of Advisors for Computers in Education, Department for Education and Science U.K.</b>
<b>NCCA</b>	<b>National Council for Curriculum Assessment Department of Education and Science, Dublin.</b>
<b>NCTE</b>	<b>National Centre for Technology in Education, DES, Ireland.</b>
<b>NPADC</b>	<b>National Policy Advisory and Development Committee for ICT development in schools DES Ireland.</b>
<b>OECD</b>	<b>Organisation for Economic Co-operation and Development</b>
<b>SIP</b>	<b>Schools Integration Project (NCTE)</b>
<b>TSI</b>	<b>Teaching Skills Initiative (NCTE)</b>





