

The role of the teaching principal in promoting ICT use in small primary schools in Ireland.

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Abstract

The focus of this study was to examine the leadership role as lived by teaching principals in a selection of small primary schools in the west of Ireland and in particular the implications ICT has for that role. The study involved the use of individual one-to-one semi-structured interviews with a selection of thirteen primary school principals in the mid west region. Following analysis of the interview data a focus group interview with eight of the principals was conducted to validate and explore the issues to emerge from the one-to-one interviews. Principals had enthusiastically responded to the national ICT in schools initiative (*Schools IT2000*) but it had significantly added to the demands of their positions. While the lack of up-to-date resources, poor levels of technical support and time were identified as the main impediments, a lack of familiarity of ways in which the technology could be integrated across the curriculum affected the quality of pedagogical leadership provided by them. The research highlights the need for alternative models of support and leadership to be considered.

Keywords: Principal; leadership; ICT; schools; pedagogical leadership.

Introduction

It is widely accepted that the quality of teaching and learning must be a central preoccupation of all those entrusted with positions of leadership in schools (Southworth, 2004). Principals are the key pedagogical leaders and, as such, their views and thought processes in relation to ICT in particular can have a major bearing on the extent to which new technologies will become embedded in the teaching and learning process. The introduction of ICT into schools has made significant demands for change and there is a widely held view that unless the principal teacher takes on board and drives that change very little will happen (Otto & Albion, 2004).

The focus of this study is to investigate the state of Information and Communications Technology (ICT) in a selection of small primary schools in the west of Ireland. These schools are led by teaching principals, principals who, in addition to their leadership role, have responsibility for teaching a multi-grade class. This leadership

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role includes responsibility for formulating ICT policy and giving leadership in the use of technology in the curriculum. The study aims to:

- Examine the leadership role as lived by these principals and in particular the implications that ICT has for that role.
- Explore various factors that enable or inhibit such use.

Background to the study

The study is being written against a background of considerable change in Irish Education. Primary level schooling in Ireland deals with the education of children from four to twelve years plus. At this level two issues, ICT and curriculum renewal, have dominated the educational horizon in recent years. It is logical to assume that these issues are intertwined and developing in tandem. But it seems that this is not the case and it raises legitimate questions concerning principals' abilities to mediate curricula in the Information Age.

The use of ICT in schools received its first major push at system level with the launch of the *Schools IT2000* initiative in November 1997. The initiative involved the spending of €50 million of state funds on ICT infrastructure and training over the following three years. The National Centre for Technology in Education (NCTE) was established in 1998 to implement the initiative. There followed a period of intense interest and activity in ICT in schools. Such activity received a further boost with the launch of a new programme in 2001, *Blueprint for the Future of ICT in Education*. The projected investment involved was to be approximately €108 million by the end of 2002. ICT was very much on the agenda during that period. In May 2004, The Department of Education and Science (DES) allocated €18 million to provide broadband connectivity to Irish schools. The government also promised to provide funds for school networking which would be further enabled by the provision by the state of a range of centrally hosted services. The announcement of this investment was timely as there was a growing perception among Irish primary school principals that the interest in ICT in schools had dissipated since the initial investment in 1997¹.

¹ In an article in *The Irish Times* on March 25th 2006, John Collins noted that "Teachers feel angry that, since 2002 and the culmination of the last strategy and funding programme, IT 2000, which pumped more than €50 million worth of technology and services into schools, the department has not even had an IT strategy document. (*The Irish Times*, 2006).

It is amidst this backdrop that the research was conducted.

Literature review

The Importance of leadership in schools

The importance of effective leadership in schools is widely recognized (Senge, 1990; Fullan, 2003; Leithwood, Louis, Anderson, & Wahlstrom, 2004; Macneill, Cavanagh, & Silcox, 2005). According to Macneill *et al.* (2005), schools' success in educating pupils 'is highly dependent upon the presence and nature of multi-leveled pedagogic leadership' (p. 1). The report on the National Education Convention (Coolahan, 1994), held in Ireland, notes, '...research has identified a strong relationship between positive school leadership and institutional effectiveness...' (p. 2). Furthermore, Fullan (2003) contends that leadership 'is crucial to large-scale sustainable reform' and that leadership 'represents the strategy of the 21st century' (p.144). Yet leadership is a complex and multifaceted concept. Bowring-Carr and West-Burnham (1997) suggest that schools require leaders who are 'at ease in a complex and chaotic world which is changing faster than at any other time in human history' (p. 137). They refer to Sergiovanni's summation of leadership qualities;

Leadership for meaning, leadership for problem solving, collegial leadership, leadership as shared responsibility, leadership that serves school purposes, leadership that is tough enough to demand a great deal from everyone, and leadership that is tender enough to encourage the heart – these are the images of leadership we need for schools as communities. (Sergiovanni, 1997, ¶ 13)

The collegial approach to leadership is necessarily a collaborative one. Collaborative leadership, underpinned by continuous professional development, has replaced the autocratic leadership of the past (Wilsmore, 2000). Wilsmore's review of research in this area also identifies the articulation of a shared vision, together with modelling and a necessity for principals to be knowledgeable in key areas as further requirements of the modern leadership portfolio. Hargreaves and Fullan (1998) urged leaders to respect those they want to silence, move towards the danger in forming new alliances, manage emotionally as well as rationally and to fight for lost causes.

Managing change is one of the most significant challenges facing school leaders today.

Bringing about successful educational change is a long-term and socially complex process, where the implementation stage is particularly problematic – requiring scope for practitioners to work out their individual meanings of what the changes involve for their own thinking, beliefs and actions (Preedy, Glatter, & Wise, 2003, p.7)

Macneill *et al.* (2005) contend that ‘leadership is always about addressing issues of change’ (p. 5) and that studies of leadership have persistently failed to acknowledge this. Fullan (2004) refers to change as ‘overloaded, fragmented, non-linear, relentless and breathtakingly fast-paced’ (p. 10). Little will change unless the leader can explain the necessity for radical change and then ‘elucidate the vision of how the school can change’ (Bowring-Carr & West-Burnham, 1997, p.156). It would be difficult to argue that much of the transformation of modern society is not linked to changes in technology. Gurr (2000) refers to changes in society as being intrinsic to the information revolution that has spawned our so-called knowledge society.

ICT leadership

Hughes and Zachariah (2001) conclude that there is agreement among experts that ‘success or failure of technology integration could be linked to the behaviours and ideologies of the instructional leader’ (p. 2). Akbaba-Altun (2004) notes that it is inevitable that school principals will have new roles as the use of ICT increase in schools. Passey (2002) asserts that ‘senior managers in schools have a major impact upon classroom and curriculum practices, and the ways in which changes are introduced’ (p. 2). Schiller (2003) argues that without the principal’s support ‘the educational potential of information and communications technology may not be realized’ (p. 171). Yet despite the importance of the principal’s role, he claims that the ICT research literature has tended to overlook this important aspect: ‘Principals need to assume a major responsibility for initiating and implementing school change through the use of information and communications technology’ (p. 171).

In-depth case studies by Tubin (2006) into the use of ICT in nine successful ICT using schools in Israel found that the style of leadership can help ease the introduction

of ICT into schools. Yet the task of providing effective leadership is a challenging one. Collison and Fedoruk-Cook (2004) note numerous challenges, including encouraging dissemination, collaborating with teachers and encouraging and arranging peer observations for interested teachers. In their research into the use of ICT in three project schools in the US, they found limited opportunities for principal-led faculty collaboration, suggesting this is not a role currently prioritised. Research by Akbaba-Altun (2004) on the self-reported IT related roles of 17 Turkish principals found that while the principals agreed that they had an important role in providing technological leadership, they claimed they did not have the knowledge and skills to realise these roles. This finding concurs with research by Robertson, Grady, Fluck, and Webb (2006) into the issues school leaders considered important in regard to ICT in 50 Tasmanian schools. Their research found that role of the principal in acting as an initiator was considered an important function in the process of ICT adoption. In a telephone survey involving 52 south African principals, conducted by Mentz and Mentz (2003), exploring the challenges and associated leadership challenges of the introduction of technology into schools in a developing country, they found that; ‘It became evident that principals are frustrated because they seem unable to manage their schools in order to be in line with developments in the real world’ (p. 193). Speaking about the situation in Canada Flanagan and Jacobsen (2003) argue that principals are required to provide leadership in areas they are unfamiliar. They further add;

Many principals have not been prepared for their new role as technology leaders, and have therefore struggled to develop both the human and technical resources necessary to achieve ICT outcomes in their schools. Very few principals have themselves used computers in meaningful ways with children, and therefore lack the requisite pedagogical vision and experience to guide teachers. (p. 127)

Leadership in Irish schools

In recognition that leadership is a crucial component of the education enterprise, The DES in Ireland established a programme for the professional development of school leaders, Leadership Development in Schools (LDS), in 2002. The programme aimed to equip school leaders with the capacity to handle the increasing complexity of their role as leaders in schools.

In 2002 the LDS team published *School Leadership – A Profile*, in which the key dimensions of the role are delineated as personal, transformational, instructional and organisational leadership. The profile regards these facets as interdependent and their connectedness is underscored by the values and ethical behaviours of individual school leaders.

The instructional element of the leadership profile has gained prominence in recent times and is seen as critical to school improvement. Macneill *et al.* (2005) take issue with the notion of instructional leadership and regard instruction as a limiting, clinical term that assigns much greater importance to the teaching rather than the learning facet of the educational enterprise. In asserting that the primary focus of education is students' learning, they prefer the notion of pedagogic, rather than instructional, leadership. Pedagogic leadership emphasizes, in a more holistic way, the overall development of the child. This notion would appear to have a particular resonance for education due to the promotion of constructivist principals of pedagogy as a fundamental underpinning of the integration of ICT in curriculum.

The teaching principal

The Future of Small Schools and Teaching Principalship in Ireland (IPPN, 2005) quotes the important statistic that eighty percent of Irish Primary School principals are teaching principals. In relation to the present study it is also interesting to note that seventy six percent of these schools are 2, 3, or 4 teacher schools. The principals of these schools face the increasingly difficult challenges associated with the dual role of class teacher and school principal.

A review of limited research in this area reveals that the Irish situation is not unique and that the challenges facing small schools in Ireland are similar to those facing such schools in other parts of the world. Murdoch and Schiller (2002), in a review of international research in this area, found that these teachers perceived their classroom role to be of major importance but that the increasing demands of administration, accountability and leadership were impinging on this role quite seriously. They identified feelings of guilt and frustration arising from neglect of the classroom role as a major source of stress for these principals. It is clear from the research that the position of principal has witnessed a significant increase in workload in recent years.

Research design and methodology

As outlined in the introduction section the key aims of the research were to:

- Examine the leadership role as lived by these principals and in particular the implications ICT has for that role.
- Explore various factors that enable or inhibit such use.

In exploring possible research methodologies several options were considered. Some large-scale surveys have been carried out into the nature of ICT use in Irish primary schools and the broad issues affecting integration (Mulkeen, 2003, 2004) and while most principals have experience of completing such surveys, the focus of this particular study called for a research methodology that provided the capacity to explore ‘... the complexity of the various aspects of schools and schooling: for research which explores and takes account of different objective experiences and subjective perspectives’ (Bassey, 1999, p.x). The use of individual one-to-one semi-structured interviews as the primary source of data was deemed the most suitable methodology. A semi-structured format would ensure a level of consistency between interviews while also providing opportunities to explore and probe specific responses from interviewees, ‘qualitative interviewing utilizes open-ended questions that allow for individual variations’ (Hoepfl, 1997, p.52).

All thirteen teachers to take part in the study participated in a one-to-one interview. Following analysis of all interview data, a focus group interview was conducted involving eight of the principals, facilitated by one researcher. Focus group interviews have become an established part of the methodological tool kit within the social sciences. Williams and Katz (2001) define focus group interviews as:

a small gathering of individuals who have a common interest or characteristic, assembled by a moderator, who uses the group and its interactions as a way to gain information about a particular issue (Williams & Katz, 2001, ¶ 4).

The key distinguishing characteristic of focus group interviews ‘*is the insight and data produced by the interaction between participants*’ (Gibbs, 1997, ¶ 5). Gibbs

(1997) sees their main purpose as a unique method of eliciting feelings, experiences, attitudes and reactions to a particular topic. Catterall and Maclaran (1997) list among the benefits of focus group interviews, snowballing, synergism, security, stimulation and spontaneity and providing data rich in detail. The decision to convene a focus group interview was taken for a number of reasons. Firstly, Stewart and Shamdasani (1990) and Wilson (1997) note that among the uses of focus groups they can help researchers understand previous data collected by quantitative methods. Secondly, in the absence of a mixed method approach involving quantitative and qualitative measures, and the triangulating effect of such varying approaches, it was felt that the convening of a focus group discussion would compliment and help to validate issues emerging from the interviews (Morgan, 1998). Cohen *et al.* (2007) argue that focus group interviews can be useful to 'triangulate with more traditional forms of interviewing' (p. 377). Therefore the validity of the interpretations made from the one-to-one interviews was assessed through the focus group discussion.

Having identified the key issues to emerge from the analysis of the interview data a topic guide (discussion guide) was created. The topic guide provided structure and focus to the discussion and provided an outline of the content of the discussion for the participants in advance (Greenbaum, 2000). Following a short introductory activity, themes that had emerged in the analysis of the interview data were explored through the focus group. This process enabled the initial interpretations of the interview data to be explored in greater depth.

Selecting the principals

Geographical considerations were, of necessity, paramount in selecting principals for interview. It was decided to confine this study to an area within a twenty-kilometre radius of a large town in the mid-west region of Ireland. The study, while confined to convenience sampling, aimed at maximum variation. 'Maximum variation sampling can yield detailed descriptions of each case, in addition to identifying shared patterns that cut across cases' (Hoepfl, 1997, p.52). Nationally, according to an Irish Primary Principals' Network (IPPN) national survey in 2005, 73% of principals are doubling up as mainstream class teachers (IPPN, 2005). Two, three, four and five teacher schools (the type of schools in this study) are by far the most common in the Republic

of Ireland. According to the DES statistical report for the 2003/2004 school year, these schools constitute over half of all primary schools. The principals selected for this study, therefore, represented a substantial cohort of schools in the Republic of Ireland.

In terms of experience, principals interviewed had between fifteen and thirty two years of teaching experience and between two and twenty-five years experience in the role of principal. Nine of the principals interviewed were male and only four were female. This ratio reflects the imbalance of female to male principals nationally where over 80% of primary teachers are female but less than 50% are principals (DES, 2007). All semi-structured interviews conducted were approximately one hour in length. The one-to-one interviews were conducted throughout the Spring semester of 2005 mostly in the principals' schools. Following analysis of the interviews the focus group interview was convened with eight principals randomly selected from all those interviewed. It was decided to randomly select the participants for the focus group discussion since the role of the focus group discussion was to primarily validate the researchers' interpretations of the issues to emerge from the one-to-one interviews rather than to probe individual experiences further. The focus group took place in the summer of 2005 in a local education centre.

Content analysis of transcribed data

All transcribed interviews were subject to content analysis in relation to the key research questions guiding the study. Content analysis is particularly suited to analysing large quantities of text as it can reduce text into summary form using predefined categories enabling themes to be identified (Cohen, Manion & Morrison, 2007). However, Duriau, Reger and Pfarrer (2007) claim that analysis of content can be conducted at two levels. While at one level the content can be 'captured and revealed in a number of text statistics' (p.7), a second level of analysis involves an exploration of the deeper meaning within the text.

An initial reading of the transcripts of the interviews saw various issues recurring and subsequent themes emerging and, while individual experiences differed, there was a surprising level of consistency across the participant responses to a range of issues. Having identified and coded the range of issues, all data was subject to a second round of analysis in order to assess the accuracy of the initial themes identified and to probe the deeper meaning behind these recurring

issues, as Duriau et al (2007) call the ‘values, intentions, attitudes, and cognitions’ (p. 6) within the text. In order to minimise potential issues of bias every effort was made to quantify the existence of issues identified and understand the context in which they were said. This is particularly helpful where the researcher’s initial beliefs and expectations may influence the interpretation of the data emphasising issues, which may not have been prevalent in the participants’ responses. Yet while content analysis can bring a level of objectivity to the analysis of the collected data, the reading of any text is subject to a multitude of interpretations depending on the individual and the unique perspectives they bring to the process (Krippendorp, 2004). In addition, the focus group played an important role in validating the researchers’ interpretations of the initial interview data.

Research findings

Participant profile

The thirteen teaching principals interviewed had spent between 15 and 28 years in the classroom and had experience of principalship ranging from 2 to 25 years (Average is 9 years). These teaching principals had substitute cover (since 2000) of between 14 and 22 days per year for administration days. The remaining days involved full teaching duties in classes averaging 24 pupils. Their schools had 2, 3, 4 or 5 class teachers, including the teaching principal.

Disillusionment and frustration

The difficulties of the leadership role as carried out by teaching principals, already alluded to, emerged as a significant issue and there was considerable uniformity across the various responses. The *Schools IT2000* initiative and its emphasis on integrating ICT had not caused these difficulties but had certainly added to them.

But then what was demanded of us, and it fell on the principals again, to write up policies, to return all this stuff to the NCTE [National Centre for Technology in Education]. I felt myself there were constant demands. If you were going to get money there was this carrot held in front of you, and I found myself down there at night preparing stuff and sending back stuff and worried that we would lose out in this major revolution. But I think the revolution was very short lived.

In all but three schools the principal was also the ICT co-ordinator, having responsibility for everything to do with technology in the school. In the remaining three schools responsibility for ICT had been handed to a senior teacher. In three of the surveyed schools the principal had also provided technical back up which would frequently have involved class disruption in response to requests from other teachers for a solution to various malfunctions. In one school, the principal's husband, who was not a member of staff, had supplied free technical back up for several years but was no longer able to provide the support due to work commitments.

Various attempts were made to ascertain to what extent the principal provided instructional or pedagogical leadership in the use of ICT in the various schools. While some principals did not feel that they had a leadership role to play in this sense (because they were not adequately trained to do so), others felt a pressure to lead;

I find it difficult to bring everybody along that path, to try to get everybody in the school interested in the computers, and it's very difficult to speak to people that have maybe 34 children in a split class and say, 'Well, you know, why not use a computer?'

From data supplied it was evident that the majority of principals or others with this function were not providing leadership of this nature. At the same time it is important to acknowledge that all principals would appear to have expended significant amounts of time and energy in facilitating the provision of significant hardware and software resources so that ICT would have a visible profile within the schools;

... you need to be innovative, you need to be dreaming up of ways that you are going to make the use of the ICT and that requires an awful lot of extra time and extra effort and hoping that the actual hardware and the software will be actually compatible to what you want to do.

Another principal, who has ninety pupils in her school and a dedicated computer room, commented in the focus group discussion;

I'm sure I have spent €15,000 on computers; I would love to have spent it on books... I feel I would have had something out of it at this stage. And while I believe in computers as such, and I'm disappointed that this is the way that I am after all these years at this point in time

because I think children should be educated to use them properly and to be able to get the best out of them, but we in our school are not skilled enough to manage them.

It was very evident that the schools referred to in this study had invested heavily in technology. Principals, in particular, had given generously in terms of time and effort so that technology was made available in their schools. It is clear from this research that the use of technology falls far short of what is desired by the principals in question. It is reasonable then to examine what were their understanding of the role of ICT.

Participants' understanding of the role of ICT

The principals interviewed appeared to place a strong emphasis on the need for ICT skills. There were repeated references for the need to provide pupils with appropriate ICT skills. One principal noted that services such as Internet and telephone banking were becoming an integral part of daily life and that children needed to be prepared for that, 'they're going to become second nature to kids and we have to prepare them for the use of it'. Another highlighted the importance of communications in the modern age and viewed the Internet and email as being hugely important. A third mentioned that providing them with appropriate ICT skills would, 'make them forward looking, I think. Give them more confidence going to secondary [school]'. These views appeared to influence the nature of ICT use with five of the thirteen principals interviewed feeling quite strongly that typing skills should be taught to children, 'typing skills, I think, should be the first thing taught, because I know in my own case if I have to send an email, I'm going with my one finger'. Suggestions of how ICT could be embedded across the curriculum were rare. This may have been due to the absence of models of good practice. An interview response suggests this;

...[if] there was a type of curricular approach maybe...a recommendation on this is what we could do, this is what we could focus on. Guidelines on that, I think, would be handy.

There was a general consensus among these principals that the responsibility for leading the integration of ICT into the curriculum rests on the shoulders of the principal and that assistance for this role from external agencies, particularly from the DES, was inadequate. The comment above was symptomatic of a widely held view that best practice in integrating ICT was poorly disseminated, yet exemplars did appear to exist as this focus group comment highlights;

we've been provided with excellent exemplars at the moment but it was an add-on that came in a pink folder last year that people hardly even know exists in schools.

Feelings of guilt that more should be happening in the school in this area were common. One participant freely admitted that leadership came from neither within the school nor from any agency such as the DES but that a group of parents were constantly applying pressure to maximise the use of the technology in the school. Some of these principals seemed to believe that in the absence of clear direction on what to do with the technology that teaching typing was at least giving children something worthwhile although there was little evidence from the principals' comments that the technology was widely used. The following comments from the Focus Group discussion were revealing:

Once a year maybe I'll try and do some little bit of word processing for a newsletter or something like that and that's about as much as I give them experience of. I don't know; it doesn't register with me as being a very important area. By the time you get your three Rs done or the core subjects done it's 3 o'clock.

Another stated:

I'd have to admit that there are times ... I'd say we're not doing the computers now, for to get a run at something, I find that it gets in my way to a degree, which I suppose is not right, but you know what I mean when you have multi-class [mixed age group].

Given these findings it is worth investigating what were the issues the principals perceived to be preventing greater use of ICT within their schools.

Problems of infrastructure

While this research did not attempt to ascertain detailed information on the technological infrastructure in participating schools, principals were asked, in interview, to tell about the history of ICT in their school. In answering this question principals concluded by describing their schools' ownership and deployment of ICT equipment. Pupil computer ratio in these schools ranged from 5:1 to 15:1 but the average ratio was 8:1. However, pupil to computer ratio can be a crude measure of levels of equipment as they do not indicate the quality of the equipment. Principals were not specifically asked to supply data on the age and type of computer equipment in each school. Nevertheless, there is evidence to suggest that much of the equipment is relatively old. It is apparent that some principals, at least, have used contacts among parents, in industry and elsewhere to acquire second-hand machines. One principal stated, 'We've a serious problem with the use of outdated machines...'. Another also appeared to have relatively old equipment but didn't see this as a major problem;

We have been fortunate to have a parent who has contacts with a computer company and they were getting rid of quite a number of computers and there was nothing wrong with them. They would be perfectly adequate for our needs here in school, and we got about 6 or 7 of them. With the result we have about 11 or 12 computers now, one laptop, and a data projector

In another school the principal recalled that his school purchased eight second-hand computers four years previously and this number of machines now constituted two thirds of the compliment of computers in the school's computer room. Other issues in the infrastructure are also pertinent. The inadequate space available in classrooms also emerged as a problem in a number of schools. One principal, talking about the lengths a member of his teaching staff went to establish a computer room;

...the group was too big to fit into any other classroom so we had to convert our general purpose room. [The room] has maybe two sockets...[the teacher] has extension leads running for the television, for the stereo, for everything, so from his point of view the IT would be very limited, and it's because of the physical set up, certainly not any lack of enthusiasm on his part.

Technical support

While some principals regarded outdated equipment as problematic, clearly others did not. There was broad agreement, however, that the unreliability of existing equipment

and the frequency with which this equipment malfunctioned was a significant barrier to using ICT in teaching and learning. It was also clear that putting in place effective provision for technical support was causing principals considerable difficulty. Comments from the focus group discussion illustrated the frustration caused by malfunctions. 'as sure as you get very enthusiastic to start something, something would break down'. Another focus group participant spoke of 'this pulling the rug from under your feet, when you have found this enthusiasm'.

Schools appeared to have had various methods of dealing with the variety of problems that arose. Reference was made to principals doing this work and also to others (such as teaching assistants and secretaries) in schools having some expertise to address various technical problems. Principals were adamant that they needed immediate, high quality technical support and all schools involved in this research had given some consideration to paying for such expertise. The immediacy of response to breakdowns was a key issue. Principals themselves felt they were no longer able or willing to solve technical problems as in the past. Approximately half the principals made reference to the fact that technical support was extremely expensive and no principal suggested otherwise. The notion of having a formal contract to deal with this issue was mentioned infrequently during interviews but there is evidence that many schools are moving towards a regular arrangement with a supplier of technical support.

Discussion of findings

Leadership and ICT

There are a number of corroborative references in the literature review to support the notion that leadership as vested in the school principal has a profound influence on teaching and learning, on the implementation of change and as a consequence on the successful integration of ICT in education (Akaba-Altun, 2004; Tubin, 2006; Robertson *et al.*, 2006). According to Yee (2001), successful integration of ICT involves the principal in equitably providing all staff with access to ICT and ensuring that it is adequately maintained. The principal must keep student learning at the heart of all ICT decision making. He/she must be an ICT learner alongside everybody else and be adventurous in terms of increasing personal ICT competence and

experimenting with innovative strategies for incorporating ICT into the classroom. The principal ought to be willing to teach staff, pupils and parents and encourage the staff towards suitable professional development. Constant monitoring implies that principals closely supervise the teaching of staff and ensures that teachers use ICT in accordance with the developed and shared vision of the school. Ultimately the principal is the keeper of the ICT vision and one who is responsible for leading and driving change in attitudes and practices in regard to ICT.

It could also be argued that teaching principals, by virtue of their teaching role, which keeps them close to curriculum and pedagogy, are even better placed than their administrative colleagues to be influential leaders of pedagogical change. There are, however, several reasons why the teaching principalship, in its current manifestation in Ireland, prohibits the type of activities advocated by Yee (2001) and others. Liddy's (2000) study of the teaching principal role identifies demands of an ever-increasing workload, excessive interruption of teaching time, the expanding nature of administrative duties coupled with full-time teaching, lack of clerical and other ancillary support and the inability to exercise instructional leadership as a result of the foregoing factors as sources of problems and tensions for principals.

All of these factors are relevant for the principals in this study, and they have the effect of preventing principals from exercising the type of leadership advocated by Yee (2001). This research suggests that they have not got the time necessary to plan and execute strategies that will result in change. Accountability requirements in recent years have necessitated principals spending large amounts of time in drafting and finalising policy documents in a wide range of administrative areas as well as responding to the planning needs arising from the implementation of the new Primary Curriculum.

Liddy (2000) and Murdoch and Schiller (2002) agree that for teaching principals the teaching aspect of the dual role and the sense of responsibility they feel towards the pupils in their classrooms are of paramount importance.

Guilt, frustration and heavy workloads have created an environment where teaching principals' health, family and relationships are suffering. (Murdoch & Schiller, 2002, conclusions section, para. 1)

There are other aspects of this dual role that inhibit the exercising of leadership. The monitoring of the teaching of staff members as suggested by Yee (2001) is problematic on a number of counts. Firstly, Irish teaching principals have limited release time from teaching duties to engage in such an endeavour. Secondly, should they have sufficient time they would have to overcome a culture in schools where the principal was merely “*primus inter pares*” as opposed to somebody who has the necessary “*authority*” to monitor the teaching of colleagues (Drea & O’Brien, 2001). Sugrue (2003) refers to this problem in terms of ‘treating the classroom as an independent republic’ (p. 11) and the effect that this culture has on inhibiting collaborative practices in schools. This difficulty is further compounded by the fact that many principals would not have the necessary mentoring skills required to assist teaching colleagues in matters pedagogical, a factor referred to by Brady (2004) and bearing in mind that most of the surveyed principals are ICT coordinators also.

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. (Brady, 2004, p.10)

However, providing principals with the time to provide leadership in the area of ICT is only one part of the solution. As the findings have highlighted, the participants’ understanding of the potential role and use of ICT in schools appeared to be focused on the acquisition of IT skills. This was in part a result of a perceived policy vacuum where models of good practice were not, in their opinions, distributed effectively to those in leadership positions. Within this perceived vacuum, the use of ICT was limited to the types of use familiar to the principals and teachers. Given that these types of activities tended to focus on skills acquisition, and were detached from other aspects of the curriculum, it is not surprising that the use of ICT had not developed beyond an add-on activity in most schools. This limited use is not unique to the research schools as a recent publication of the National Assessment of English Reading (NAER) highlights;

Despite a dramatic improvement in the availability of computers, ICT does not form a regular or integral component of pupils' experiences in English lessons. As it is likely that use of ICT is related to teacher competence in ICT, all teachers should receive training in the application of ICT to English lessons, in matching programmes to pupils, and in providing support to pupils using such programmes. (Eivers, Shiel, Perkins, & Cosgrove, 2006, p.28)

Effective pedagogical leadership is impossible when those in leadership positions are not familiar with the potential ways in which ICT can support teaching and learning across the curriculum. Mulkeen (2003), in acknowledging the importance of leadership, proposes 'policies focused on the thinking of school principals' (p.14). Future professional development opportunities need to take these issues into consideration.

The research presented paints a picture of schools struggling to meet the expectations of national ICT initiatives yet it should be noted that ICT is a relatively recent initiative and it is inevitable that all institutions, regardless of their size and structure, require a period of transition. This research has captured this time period. It is one of change and adaptation where decisions are made and mistakes occur but the experience gained is valuable. This collective institutional knowledge and experience gained in this period will undoubtedly play an important role in future decisions and ultimately improve the opportunities of ICT integration and growth. The challenges for these small schools are, due to their size and structure, different than other larger schools. The solutions to many of the logistical, technical and pedagogical problems requires new relationships between similar schools. There was evidence from the principals' responses that similar sized schools were beginning to collaborate on issues such as the supply of technical support. These collaborative ventures may lead to the development of more supportive networks enabling the sharing of pedagogical knowledge and models of best practice. The long-term impact on the need to pool resources, knowledge and experience may have lasting benefits beyond ICT use.

The principals in this study seemed primarily focused on developing their ICT infrastructure and many had been quite creative and imaginative in finding ways of obtaining ICT resources and technical support. However, as this research has shown, without a similar emphasis on promoting the integrated use across the curriculum use of ICT did not evolve beyond a separate skills activity. It is worth considering what

may assist the schools beyond this position. Comments from the principals regarding parents interest in ensuring ICT was an important part of their children's education experience suggests that the increased use of ICT by pupils in the home may challenge schools to consider alternative uses of the technology since the pupils will have acquired the basic skills through home use and will not be motivated by simple skills activities. It may therefore be that the proliferation of ICT within the pupils' lives outside of school will cause more significant change within schools rather than state-wide ICT initiatives.

Conclusions

This study has examined the leadership role of a group of teaching principals focusing on the affect ICT has had on their roles in their schools in Spring/Summer of 2005 and at a time when the Irish Government was attempting to extend broadband connectivity to all Irish schools. Analysis of data collected in the research found that the integration of ICT into the curriculum in these schools had lost much of the momentum that typified the era immediately succeeding the launch of the *Schools IT2000* initiative. This concurs with observations made by several commentators at that time². The main reasons for this drop in interest seemed to stem from the lack of ongoing investment in ICT resources and the provision of continuing professional development. This finding has significant implications for future initiatives since it highlights that without sustained support and professional development, initial progress made in educational reforms may quickly diminish. However, more importantly, the perceived failures contribute to a reluctance among the original participants to engage in future initiatives. This may ultimately prove to be the most significant legacy left from recent ICT initiatives.

In the preceding years these principals had enthusiastically responded to the Schools IT2000 initiative and had acquired impressive levels of ICT resources. This level of effort was challenging for many and the introduction of ICT had significantly added to the demands of their positions. Yet the nature of ICT use in many of the principals' schools had not developed beyond the acquisition of basic ICT skills. There was a level of frustration among the principals interviewed in this study as many felt unable

² See: *Back of the Class for IT in education* by John Kennedy. *Irish Independent*, 27th April, 2006 and '*Fears for ICT in schools as election looms*' by Brian Skelly. *Irish Times*, 2nd February, 2007.

to achieve the level of ICT use they would like within their schools. While the lack of up-to-date resources, poor levels of technical support and time were identified as the main impediments by the principals, a closer analysis of the principals' comments revealed that a lack of familiarity of ways in which the technology could be integrated across the curriculum affected the quality of pedagogical leadership provided by them. This too was a contributing factor. With the enormous demands placed on principals within these small schools should they be responsible for the leadership of ICT? Given the nature of these schools this research highlights the need for alternative models of support and leadership to be considered that no longer see these schools as independent separate units. A model of providing pedagogical leadership in the areas of ICT to a network of similar sized schools in a local region could prove more advantageous and effective. Policies encouraging collaboration between schools in relation to ICT can also help share models of good practice and nurture a professional dialogue between teachers about the current and future possibilities of ICT.

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