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The development and implementation of ICT policy for schools in the Irish post-primary context: a critical analysis

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The Development and Implementation of ICT Policy for
Schools in the Irish Post-Primary Context:
A Critical Analysis

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Abstract

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The Development and Implementation of ICT Policy for Schools in the Irish Post-Primary Context: A Critical Analysis

Since the mid 1990's there has been an increased emphasis on ICTs in national educational policies, particularly in developed countries. This has been reflected in increased levels of Government expenditure coupled with the development and implementation of specific initiatives to support the use of ICTs in schools. This emphasis has been based on the perceived educational potential of the Internet coupled with the global adoption of concepts such as the 'knowledge/information society' and the 'knowledge economy.'

In Ireland the first ever policy for ICT in schools entitled *Schools IT2000: A Policy Framework for the New Millennium* was launched by the Department of Education and Science (DES) in 1997. Schools IT2000 aimed to address the development of technology use in primary and post-primary schools and focused on four main areas: technology infrastructure, training for teachers, pilot projects and support services.

This study aims to establish how this policy was developed, to identify the factors that influence its development and to establish the outcomes arising from its implementation. It takes a critical qualitative approach drawing on nineteen interviews with policy makers and actors who were prominent at differing levels with respect to this initiative, as well as documentary evidence and related literature. The analysis of Schools IT2000 is set against the backdrop of the dominant discourses on ICT policy and educational change, the broad context of Irish educational policy making and the history of developments relating to technology in education in the Irish setting.

The evidence suggests that Schools IT2000 enacted an approach to policy and policy implementation consistent with a techno-centric/innovation-focused discourse, characterised by a lack of clarity regarding educational purpose, an emphasis on the provision of infrastructure underpinned by the unstated assumption that technological provision (coupled with basic IT skills for teachers) would lead to worthwhile outcomes, little consideration of school and teacher contexts, an over reliance on pilot projects and limited attention to ongoing evaluation and research. The influence of political and external factors including the neo-liberal agenda also contributed strongly to the approach enacted.

Based on this analysis recommendations for future DES post-primary level ICT policies are presented. These recommendations centre on the necessity to recognise the significance of context and the complexity of change in respect of any future ICT policy initiatives. This suggests a greater attention to social practice type variables than was the case in Schools IT2000. The desirability of engaging teachers in professional learning communities in the context of schools as learning organisations is advanced in respect of the implications of this understanding of educational change.

Declaration

I hereby declare that this thesis is entirely my own work and has not been submitted for the award of any degree at this or any other University.

A handwritten signature in black ink, appearing to read 'Keith Johnston', with a long horizontal flourish extending to the right.

Keith Johnston, May 2014

This thesis is dedicated to the love and support of my wife Caroline and my two daughters
Amy and Eva.

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Firstly I would like to thank my supervisor Dr. Jim Gleeson for his support and guidance over the course of this study. I never ceased to be impressed by his ability to pinpoint relevant sources and by his insightfulness in identifying areas of the work needing development and improvement. I would particularly like to thank Jim for always keeping faith in me especially at stages when progress was slow.

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List of Abbreviations

ASTI	Association of Secondary Teachers of Ireland
CAD	Computer Aided Design
CAM	Computer Aided Manufacturing
CEB	Curriculum and Examinations Board
CESI	Computer Education Society of Ireland
CPD	Continuous Professional Development
CTE	Centre for Technology in Education
DCU	Dublin City University
DES	Department of Education and Science
ECDL	European Computer Driving Licence
EU	European Union
IBEC	Irish Business and Employers Confederation
ICDU	In-career Development Unit
ICT	Information and Communication Technologies
ICTU	Irish Congress of Trade Unions
IDC	International Data Corporation
IFUT	Irish Federation of University Teachers
INTO	Irish National Teachers Organisation
IPPN	Irish Primary Principals Network
ISC	Information Society Commission
ISDN	Integrated Services Digital Network
IT	Information Technology
ITIP	IT Integration Project
JMB	Joint Managerial Body
LDS	Leadership Development for Schools
NAPD	National Association of Principals and Deputy Principals
NDP	National Development Plan
NCCA	National Council for Curriculum and Assessment
NCTE	National Centre for Technology in Education

NCVA	National Council for Vocational Awards
NESC	National Economical and Social Council
NIET	National Institute of Education and Technology
NITEC	National IT in Education Centre
NPADC	National Policy Advisory and Development Committee
NPC	National Parents Council
OECD	Organisation for Economic Co-operation and Development
PCSP	Primary Curriculum Support Programme
PISA	Programme for International Student Assessment
SDPI	School Development Planning Initiative
SIP	Schools Integration Project
SSI	Schools Support Initiative
TALIS	Teaching and Learning International Study
TES	Teacher Education Section (of the DES)
TD	Teachta Dala (Irish member of parliament)
TII	Technology Integration Initiative
TMG	Top Management Group (of the DES)
TSI	Teaching Skills Initiative
TTC	Teacher Training Continuum
TUI	Teachers Union of Ireland
UK	United Kingdom
UCG	University College Galway
UL	University of Limerick
UNESCO	United Nations Educational, Scientific and Cultural Organisation
USA	United States of America
VEC	Vocational Educational Committee
VLE	Virtual Learning Environment
WSE	Whole School Evaluation

Chapter 1 Introduction

Background and Context

Since the mid 1990's there has been an increased emphasis on Information and Communications Technologies (ICTs) in the education policies of developed countries in particular. This has been reflected in Government expenditure coupled with the development and implementation of specific initiatives to support the use of ICTs in schools. In the USA the then President Bill Clinton announced the *Technology Literacy Challenge* (1996) which aimed to have all schools connected to the 'information superhighway' by the year 2000. In 1996-97 the annual expenditure on technology in American Schools reached \$4.34 billion and by 1999 US expenditure on ICT in education had exceeded that on textbooks. In the UK, *the National Grid for Learning* (1998) set aside funding of £1.2B to connect all schools to the Internet and to develop the ICT skill of teachers. Similar policies were developed and implemented at this time in countries such as Australia, Denmark, Finland, the Netherlands, Portugal, Singapore and Spain.

As reflected in the USA and UK policy initiatives expectations regarding the educational potential of technology at this time was based on the coming of the Internet. Collis et al. (1996) described this as the second-wave of interest in educational technology, the first-wave being predicated on the development of the microcomputer in the 1970's. At this time computer aided instruction was perceived as providing an opportunity to standardise teaching, to improve student performance on standardised tests and to reduce teaching costs. However Cuban (1986) based on a review of teachers' use of technologies for teaching and learning saw that all technologies to date had gone through similar cycles of expectation, rhetoric, policies and eventual limited use. Despite inevitable questions being raised regarding the potential of the Internet in light of past failures it nonetheless led educational policy makers to consider how it might serve to individualise learning, to enable greater learner control and to support more co-operative and student-centered approaches to learning (OECD, 2005a). It also led to the consideration of its potential to facilitate lifelong learning and to the global adoption of concepts such as the 'knowledge/information society' and the 'knowledge economy.' Anderson & Plomp (2009) saw the drive towards a global knowledge society at this time as emerging from two major forces in addition to being facilitated by the development of the Internet: firstly greater

inter-cultural interactions between people across the borders of countries and continents; and secondly an economic system which treated knowledge as a commodity. The explosion of information availability via the Internet also suggested the need for learners to be able to access these services and to acquire the skills necessary for accessing, retrieving and evaluating information. These concerns were related to employability in the ‘information society’ also seen as demanding enhanced collaborative and problem-solving skills.

In this context new educational ICT policy issues emerged at this time related to new possibilities for ICT-related practice in education based on the presence of the Internet. As reflected above, these possibilities were premised on a broader consideration of potential educational outcomes than had been the case in relation to the micro-computer where consideration of worthwhile student outcomes was limited to performance as measured by standardised test scores. Anderson et al. (1997) reflected this in their distinction between the ‘traditionally important’ paradigm which focused on students’ mastery of pre-defined curriculum context goals through teacher-centered instructional methods and the ‘emerging practices’ paradigm which was geared towards more student-centered approaches to teaching and learning conducive to the development of lifelong learning abilities necessary for living in the information society.

Reflective of the priorities being set at national levels at this time educational use of ICT was also identified as a priority at European Union (EU) level where the Lisbon Council set specific targets for member states in 2000. These targets set expectation that all schools in member states would have access to the Internet and multimedia resources by the end of 2001, and that all teachers would be skilled in the use of the Internet and multimedia application by the end of 2002. Following on from this the EU embarked on the eEurope action plan (European Commission, 2002) which aimed to ensure that all learners were digitally literate by the time they left formal education, being equipped with the skills perceived as necessary to live and work in the new ‘information society.’

Ireland was also party to these trends in respect of policy development and expenditure and in November 1997 launched its first ever policy for ICT in schools entitled *Schools IT2000: A Policy Framework for the New Millennium* (DES, 1997a). This programme involved an initial expenditure of £40million over three years and at the time was the single biggest

investment in an educational initiative in the Irish state. Schools IT2000 aimed to address the development of technology use in primary and post-primary schools and formed one element of the Governments' Education Technology Investment Fund which was made up of a total of £250million. Schools IT2000 focused on four main areas which were present with its constituent strands: technology infrastructure, training for teachers, pilot projects and support services. In the context of these strands, direct grants were provided to schools so that they could purchase equipment, short mainly skills based courses were developed and provided to teachers throughout the country, whilst in excess of two hundred schools participated in pilot projects aimed at identifying and disseminating good practice in educational use of ICT. In addition an online resource (ScoilNet) was developed with the aim of providing resources and support to teachers.

The current study is an analysis of the processes, influences and outcomes relating to the Schools IT2000 policy. It aims to establish how this policy was developed, to identify the influencing factors and to establish the outcomes arising from its implementation. Based on the analysis of these factors implications for future DES post-primary level ICT policies are presented. This study is not an empirical attempt to describe and evaluate Schools IT2000 but instead takes a critical qualitative approach, the resultant analysis being based on nineteen interviews with key policy makers and actors who were prominent at differing levels with respect to this initiative.

Rationale for Policy Investment in ICT in Schools

Although it is difficult to quantify precisely the exact levels of expenditure on educational ICTs the OECD (1999) estimated that at that time the annual investment across all member countries was of the order of \$16 billion. This represents on average 1-2% of the national budget for education although there was variation in the actual amounts spent by each nation only partially explained by respective levels of national wealth. Whilst levels of investment have varied by country the trend towards increasing investment was illustrated by some proxy indicators which showed that between 1993 and 2001 the percentage of students attending schools with access to the Internet grew from 24% to 97%. In the same time period the percentage of students attending schools where teachers and students used email grew from 13% to 89% whilst the proportion attending schools in which standardised software packages were being used grew from 80% to 98% (OECD, 2004a). A comparison

of the Programme for International Student Assessment (PISA) data from 2000 and 2003 indicated that the levels of investment were increasing between two and five fold across countries based on the numbers of computers available to fifteen year old at the two points where survey data was collected. This was reflected in a wholesale lowering of student to computer ratios to differing extents across participant countries.

This raises the question as to why governments have sought to invest so significantly in this area of educational provision. The expenditure on ICT has been justified on the basis of a number of recurring arguments or rationales reflected across many of the national ICT policy statements although sometimes employing differing terminology. These are the vocational/economic, social, pedagogical and catalytic rationales as identified by Hawkrige (1990). The first two of these relate to learning about technology and the latter two relate to using technology in support of learning. These justifications were reflected in the Schools IT2000 policy statement which identified social, vocational and economic, pedagogical and catalytic reasons underpinning the need for ICTs within the Irish school system. The vocational, social, pedagogical and catalytic rationales can be summarised as follows:

The vocational rationale implies that the use of ICT in schools is for the purpose of students acquiring the skills necessary to participate in the world of work or to gain employment. This rationale centers on learning *about* the technology (as distinct from learning *with*) and relates to the desire to develop a technologically literate work force for the purpose of economic development. Related to this are parents' and students' concerns that the education system should prepare students for individual success in the labour market (OECD, 2005a).

The social rationale relates to the desire to counter the potential disadvantage experienced by those who do not have access to technology outside of the school environment. The social rationale is based on the idea that provision of technology in schools will address potential social inequalities with regard to technology literacy as an essential life skill for full participation and employment in the information/knowledge society. Negroponte (1995) argued that the development of the information society has implications beyond simply technical skills and involves different kinds of learning, thinking and working skills. As such the social rationale

involves support for the development of digital literacy, problem solving and meta-cognitive skills at the school level. As highlighted by Sutton (1991) equity issues with respect to technology extend beyond mere physical access to considerations relating to the process of learning and the resultant learning outcomes i.e. what students get to experience with the technology and what they learn as a result.

The pedagogical rationale relates to the belief that the use of technology will improve teaching and learning and is linked to the catalytic rationale which understands that technology use will have a number of knock on effects with regard to pedagogy and the nature of the learning experience. The pedagogical rationale centers on the idea that technology can be used to support learning (as distinct from learning about technology as an end in itself). Potential catalytic effects with regard to pedagogy include the enhanced scope for individualised learning, project-based learning and educational approaches underpinned by a social-constructivist philosophy. This potential has been reflected in the development of open learning environments such as that in evidence in LOGO, a learning environment designed for learning mathematical and logic skills (Papert, 1980) as well as more recently in respect of content free ICT applications (Grabe & Grabe, 2007).

In addition to the vocational/economic, social, pedagogical and catalytic rationales detailed above the OECD (2005a) identified two further reasons why countries spend on ICT; firstly on the basis of a belief that ICT can reduce the cost of education, and secondly on the expectation that it can improve management and accountability processes by increasing and improving the information available to practitioners at varying levels within the education system. These various rationales have implications for the nature of ICT use in schools and reflect a multiplicity of policy goals for the associated expenditure. However not all commentators have advocated the increased emphasis and expenditure on this area of educational provision and these criticisms can be understood against a backdrop of disappointing levels of use and impact arising from the policy initiatives of the mid to late 1990's. For example Cuban (2001) argued that, continuing the historical pattern, new technologies have been 'oversold and underused' with no evidence of a resultant increase in student academic achievement. Healy (1998) expressed concerns that too much money was being spent on technology without sufficient thought and in the absence of a research

base to inform decision making. She saw over exposure to computers as having the potential to help children disconnect intellectually, socially and emotionally. Others including Bowers (1988), Oppenheimer (1997), Postman (1998) and Stoll (1995) also expressed reservations around this time of heightened interest in educational uses of technology on a system wide basis. Ferneding (2003) saw the need for further questioning of the role of technology in education, seeing that it has the political advantage of neatly fitting into the commonly understood cultural bias of technology meaning process with the result that it goes largely unquestioned, its role thus serving mainly national and economic needs. Elsewhere the OECD (2004b, p.235) described the use of ICT in schools at this time as ‘disappointing, particularly when compared with the diffusion of ICTs in other parts of society.’

This Study: ICT Policy for Schools in the Irish Context

Against the backdrop of these international developments in respect of ICTs for schools this study has as its focus related policy developments in the Irish context. The Schools IT2000 policy statement marked a watershed in the history of technology in Irish education as it provided a level of structure and formality that had not been the case previously. Prior to this, activity in this area of educational provision was on a more ad-hoc footing dependent on the interest and initiative of individual teachers and at the discretion of the individual school. This study aims to understand and analyse the process of policy development, the factors influencing the development of policy and the implementation which occurred as a result of the enactment of this policy. Implications for future DES policy in respect of ICTs are presented on the basis of this analysis. The foci for this study are as reflected in the following research questions:

- What approach was taken to the development of DES policy in relation to ICTs in post-primary education (specifically Schools IT2000)?
- What factors have influenced DES policy in relation to ICTs in post-primary education?
- How has post-primary ICT policy been implemented to date? What have been the resultant outcomes?
- What are the related policy implications of findings for future DES post-primary ICT policy?

The methodology employed was qualitative in nature and underpinned by a constructivist epistemology which recognises that truth or meaning arises from an individual's engagement with the world. Thus it was recognised that the perspectives or viewpoints articulated by the interviewees, selected on the basis of their role as policy makers or 'actors', were influenced by their interactions with one another (where applicable) and the wider context so that in effect their meaning or version of reality was developed and transmitted within an essentially social context. The data collected for the purposes of the study (19 semi-structured interview transcripts) were approached from the theoretical perspective of interpretivism which recognises the significant role of the researcher in disentangling the multiple meanings and perspectives articulated by interviewees. Thus the methodological approach taken was more in line with what Grace (1984) described as 'policy scholarship', aiming to provide a 'critical qualitative presence' as argued for by Lather (2006) rather than a quantitative evaluation type analysis as per the positivistic research paradigm. Relevant documentary evidence was also drawn on which can be seen as bringing an element of triangulation to the study, providing a further data source in addition to the interview transcripts. Data analysis was aided by the use of a dedicated software package *NVivo* which supported the process of coding undertaken by the researcher.

Structure of the Thesis

This thesis is structured in nine chapters. Chapter one sets out the background and significance to the study. Chapter two sets out the broad context of Irish education and policy making thus setting the context for the analysis of policy developments in the area of technology in education and specifically the Schools IT2000 initiative. This chapter is significant as any policy analysis cannot be divorced from the general context in which that particular policy operates. It also details the dominant discourses evident in the literature in respect of ICT policy and educational change. Chapter three details the most significant developments in relation to technology in education in Ireland during the period 1970-1990 so as to provide the historical backdrop and specific context for the analysis of developments in the late 1990's which form the focus of this work. Chapter four outlines the methodology employed including the research questions, the theoretical underpinnings to the methodology, the interviewees who contributed to the study and the approach to data analysis utilised by the researcher. The research findings are presented over the course of

chapters five, six and seven. This structure facilitates addressing of the research questions identified in chapter four. Thus chapter five addresses the process of policy development which led to the establishment of Schools IT2000, chapter six addresses the factors perceived as influencing policy developments in respect of Schools IT2000 and chapter seven addresses implementation and the outcomes perceived as arising from this policy initiative. Chapter eight discusses the findings and aims to draw together the main strands of the work by identifying and addressing the over-arching themes which emerged from the totality of the primary data analysis and the literature based contextual analysis. Chapter nine presents the conclusions emerging from the study. It summarises the main findings and highlights the implications of these findings for future DES policy in respect of ICTs in Irish education.

Chapter 2 Educational Policy and Development: The Irish Context

Introduction

This chapter sets the context for the analysis of policy developments in the area of technology in education and specifically Schools IT2000 (DES, 1997a) by setting out the broad context of Irish education and against that backdrop the context for policy development and implementation in the lead up to this initiative. The literature reviewed for the purpose of writing this chapter reveals little contestation of the main threads of the 'story' of Irish educational policy making from the initiation of the State in the early 1920's to the establishment of the DES ICT Steering Group which led to the development and launch of Schools IT2000 in early 1997. Significant aspects of this story include the influence of the past, the lack of a clear statement of aims or philosophy of education, the influence of 'cultural strangers' (O'Sullivan, 1992) such as the OECD and the EU, the availability of funding and relations between the Departments of Education and Finance, the economic imperative for education, the academic/vocational divide, a consensus approach to policy making through partnership and the role and influence of the Minister for Education, the Department of Education and associated agencies. Reflective of these themes this chapter is structured into six main sections as follows: section one outlines the Irish educational context and details how the lack of a clearly articulated underpinning philosophy and the related lack of clarity regarding purpose and goals is seen as contributing to a technical instrumental mentality in respect of education; section two addresses the influence of education for economy and human capital formation; section three addresses the policy context and identifies some salient features of educational policy making in Ireland including the adoption of a consensus or partnership based approach; section four details the role played by politics and the Minister for Education; section five considers the impact of structural fragmentation on policy implementation; finally section six extends beyond the Irish context and details the two dominant discourses evident in the literature in respect of ICT policy and educational change: the *innovation-focused* discourse and *social system-focused* discourse.

The Irish Educational Context

Many writers have located the understanding of the Irish educational system in Ireland's colonial past and a resultant dependency culture which is viewed as stifling independent

thought and development. Lee (1989, p.627) drew attention to the perceived ‘dependency syndrome that had wormed its way into the Irish psyche during the long centuries of foreign dominance’ in the context of economic performance and in similar vein the OECD (1991) flagged the impact of history on the system of education such that:

The structure, organisation and very terminology of their education system can only be apprehended in the light of the long drawn out tensions and compromises that characterised relations between a ruling Protestant minority and a large Catholic majority (OECD, 1991, p.12).

Thus the system of education may be seen as being historically dominated by the traditions and choices of colonial elites. O’Buachalla (1988, p.388) outlines how this legacy has been ‘a major factor in forming and influencing the policy process...the patterns of power and patronage and the structural formulae...have played central roles in determining the agenda of the education debate since 1900.’ Browne (1985) considered the education system as largely unchanged since Independence and whilst Gleeson (2009) acknowledged some attempts to move away from prescription of the later colonial period to a more flexible system in the late thirties he went on to outline how DeValera was not in favour of such curricular freedom with the result that Ireland post-Independence was early to adopt an approach to curriculum change predicated on the direct input and involvement of government and government agencies. In this context the OECD (1991, p.68) based on its review of education described the Irish post-primary curriculum as ‘a derivation from the “classical humanist” tradition with an overlay of technological/technical/vocational subjects and a leavening provided by development projects’ and that changes to curriculum, assessment and examinations had been ‘ongoing but piecemeal’ (OECD, 1991, p.76) suggesting more minor adjustments and additions than fundamental reform to that essentially inherited at Independence. Against this backdrop Clancy (1995, p.482) has argued that the role of the Irish education system in social selection has remained unchanged over this timeframe: ‘the educational system under colonial rule, the system after independence, and the present system fulfilled and continue to fulfill essentially similar functions.’ Drudy & Lynch (1993) detail social reproduction as one of the key roles of Irish education reflected by the manner in which the churches have seen control of education as crucial to their interests.

In the context of curriculum policy reform Gleeson (2009) has identified a perceived anti-intellectual school system and a lack of a clearly articulated underpinning philosophy as contributing to a technical instrumental approach to education in the Irish context. Lynch (1985) saw Irish education as lacking an intellectual rationale due to the dominance of the Catholic Church. She found teachers to be ‘practice orientated’ and that their training neglected the development of a critical intellectualism which ‘might explain the lack of a critical intellectual tradition in Irish education.’ Hogan (1983, p.46) concluded that the curriculum, the code of discipline and the style of discipline in most of Irelands secondary schools ‘signify a resolute censorship of the imagination by educational authorities’ seeing secondary education as effected by ‘averageness’ and ‘intellectual anaemia.’ Cosgrave and Hanrahan (2008) reflect the neo-liberal agenda equating a limited educational paradigm with a positivistic emphasis on the acquisition of knowledge or facts as further evidence of anti-intellectualism within the Irish system of education:

Almost our entire education system undermines the very attribute most needed over the coming decades for innovation to take place: creativity...we are training our young people to ask for the answer to every question, as opposed to training them to answer every question...worse still, we richly reward passive acceptance of knowledge and seldom if ever celebrate the critical examination of that knowledge...knowledge has come to be seen as a means of getting ahead (Cosgrave and Hanrahan, 2008, cited in Gleeson, 2009, p.13).

Garvin (1985) saw that anti-intellectualism was not limited to those within the secondary school system (i.e. teachers and students), with political leaders and various Ministers for Education also infected in his view. Evidence of how this anti-intellectualism spread more widely was provided by several Ministers for Education including Mulcahy’s statement in 1956 that he did not have a duty ‘to philosophise on educational matters’ and Colley and Hillery who on the introduction of comprehensive schooling outlined that they did not see it as an ideological matter. Mulcahy made his comments in the context of what became to be known as the ‘dungaree man’ speech where he outlined that:

I regard the position as Minister in the Department of Education as that of a kind of dungaree man, the plumber who will make the satisfactory communications and streamline the forces and potentialities of the educational workers and educational management in this country. He will take the knock out of the pipes and will link up everything (O’Connor, 1986, p.1).

However O’Connor saw that this conceptualisation of ‘Minister as mere dungaree man’ (O’Connor, 1986, p.81) was no longer valid come the mid-1960’s when the then minister Hillery accepted sole responsibility for educational policy and planning. The lack of ‘a

national research policy’ as identified by Sugrue (2009, p.21) and the tendency for policy to be legitimated on the basis of partnership and the work of associated agencies rather than on the basis of research can be understood as further evidence of a pervading anti-intellectual bias although Sugrue recognises that in the absence of such a national strategy the nature of academic research being small scale and fragmented has made it easier for policy-makers and politicians to dismiss its potential contribution.

Coupled with this perceived anti-intellectualism is the view that Irish education has not developed a supporting philosophical basis to underpin subsequent policy and decision making with the OECD (1991, p.76) noting that the basic goals and values of the Irish education system have ‘tended to be tacit rather than explicit.’ Mulcahy (1981, p.51) discusses the ‘disregard for aims’ at length and outlines how at no time since the foundation of the State ‘has any sustained assessment and critical analysis been undertaken in regard to the overall purposes and programmes of post-primary education in Ireland’ (Mulcahy, 1981, p.1). He details how it has been necessary to ‘work backwards’ and to establish from on-going practice what might be the actual overall aims in the absence of a clearly spelled out position. In 1989 Mulcahy identified the central question facing Irish post-primary education as the ‘general purpose, content and shape of the curriculum’ but concluded that ‘as yet there has not emerged an official view of the curriculum which is sufficiently well developed, coherent and imaginative to provide a basis for policy making which could deal in a satisfactory manner with all of the issues with which second-level education is faced’ (Mulcahy, 1989, p.95). Harris (1989, p.24) also drew attention to a perceived deficiency in respect of underpinnings seeing that ‘the drafting of an education Act would force the political system to define its objectives for education, and even to establish a philosophy of education, which is sadly lacking at present’ whilst Drudy & Lynch (1993, p.219) echoed this stating ‘what is lacking in the field of curriculum planning is a clear and articulated vision of the overall purpose of education. Various significant publications and outputs have been viewed as devoid as philosophy including the 1980 White Paper on Education (Department of Education, 1980), the Education Green Paper (Department of Education, 1992) and the National Education Convention (1993). Gleeson (2000, p.30) notes how ‘it is somewhat ironic that the Convention was dominated by issues to do with power and control and that it did not really address the primary purpose for which it was set up – to achieve a consensual view of a coherent philosophical framework.’ Instead the Report on the

Convention (Coolahan, 1994, p.7) remarked that ‘given that every educational action unavoidably presupposes a philosophy of some kind or another, the provision of an adequate philosophical rationale, from which both structures and practice draw their coherence and strength, remains a priority.’ O’Sullivan (1989, p.265) in describing Irish educational thinking as ‘fundamentally atheoretical’ drew attention to the prevalence of slogans as a replacement for theoretical principles: ‘slogans replace principles in that slogans provide a moral loading but they differ from principles because they are not derived from a social theory or vision.’ Slogans such as ‘development of full potential’, ‘equality of educational opportunity’, ‘cherishing all children equally’ and ‘child centered education’ are seen by O’Sullivan as ‘considered self evident, beyond dispute and not demanding justification to anyone educationally, economically or socially alert’ and in this context are used by policy-makers and politicians to rationalise the workings of the system in the absence of any more considered articulations.

Gleeson (2000) argues that in the absence of a coherent philosophy of education dominance has emerged of a technical mentality or culture of education characterised by the packaging of knowledge into subjects, control of curriculum and learning from the centre through syllabi and examinations, teachers valuing theory in so far as they find it practical, the teachers role in passively implementing the syllabus as handed down, and the emphasis on external measurement as reflected in Leaving Certificate points. Mulcahy (1989) drew particular attention to the influence of the Leaving Certificate examination with examination, assessment and certification viewed as exerting greater influence than curriculum. He elaborates that: ‘such assessment has become anti-educational; it has promoted assessment and certification – and the ‘coverage of content’ which leads to such certification - at the expense of worthwhile schooling’ (Mulcahy, 1989, p.87). The incidence of phrases in the educational discourse such as ‘delivery mechanisms’, ‘having an education’, ‘covering the course’, and ‘testing’ are cited by Gleeson (2000) as reflecting such a technical mentality. In relation to the development of curriculum this mentality was seen as characterised by attention to questions of content rather than to questions of pedagogy and to equating curriculum design and development with the production of documentation whereby the curriculum is seen as the syllabus document. In this understanding curriculum is seen in pragmatic rather than in ideological terms with teachers and students as consumers of the system.

The Influence of Education for Economy and Human Capital Formation

The notions of education for the economy and of human capital formation have been significant since the inception of Investment in Education (OECD/Department of Education, 1966). This may be understood in the context of limited financial resources and the significant role and influence of the Department of Finance and economists on educational policy. The necessity for Ministers of Education to negotiate vital decisions with the Department of Finance contributed to the adoption of an investment in human resources discourse and led Coolahan (1995) to conclude that Irish educational administration and policy have tended to be cautious in light of the necessity for such negotiations. O'Sullivan (1993, p.260) saw that the State through Investment in Education had managed to imbed in public thinking 'the principle that the requirements of the economy and, more particularly, those of large employers or potential employers are paramount' and that this marketisation of education 'cleverly concealed an indigenous project as an international modernising imperative' legitimating it with reference to expert and neutral OECD involvement. Investment in Education saw a significant widening of educational provision in the Irish State, raising the school leaving age to fifteen and providing free education at post-primary level. It was premised on the twin objectives of equality of educational opportunity and economic development via human capital formation. More significantly it marked the State becoming more active and directive in relation to educational policy and saw the minister for education assuming a more central role in policy than had been the case previously. O'Sullivan (2005) provides a thorough analysis and review of Investment in Education and paints a picture which reflects the coming together of a number of factors simultaneously such to influence and drive this enhanced educational provision. He outlines how:

Investment in Education has come to be regarded as a major modernising force in Irish society. It is credited with rescuing Irish education from its concern with character development and religious formation pursued through the medium of a general education largely comprised of literary and classical studies. IIE is said to have reconceptualised education as a social institution, directing attention to the needs of the economy and the imperative that schools respond to the technological requirements of industry. It is also claimed that it gave prominence to the principle of equal educational opportunity (O'Sullivan, 2005, p.129).

Above all, IIE is perceived to have normalised the link between schooling and the economy, fundamentally redefining the role of the education system in society and given vocational relevance the status of a taken-for-granted educational aim (O'Sullivan, 2005, p.129).

Drawing on O’Sullivan’s (2005) analysis the following factors can be identified as enabling and underpinning this process of cultural and educational change, and of providing the facilitating conditions and environment for it to take place at the particular point in time during the mid 1960’s:

- The re-conceptualisation of education by policy makers as investment in people.
- The acceptance of economists as sources of informed and acceptable analysis on education.
- The legitimisation provided by the input and involvement of the OECD.
- The revised perspective of the Department of Finance now seeing education as an asset in economic development and thus open to the provision of increased funding.
- The lack of contestation from commentators and teachers in relation to the emphasis on the economic, due to ‘pragmatic self interest’ (O’Sullivan, 2005, p.46).
- The more assertive and activist approach adopted by successive ministers for education at the time.
- A growing demand from parents for greater educational provision based on the recognition of a decline in the category’s of work requiring little formal education – ‘the careerism of parents’ (O’Sullivan, 2005, p.150).
- The emphasis on the economic and human capital formation as a means to an end as much as an end in itself: ‘For many, including politicians, teachers, and parents, their engagement had been partial and self interested. The state itself had potentially wider interests and perspectives than the provision of human resources for the economy’ (O’Sullivan, 2005, p.150).

The human capital paradigm and the idea that education is an investment in citizens for economic growth and gain has been reflected in various significant policy documents since Investment in Education, including the Green (Department of Education, 1992) and White Paper (Department of Education, 1995) as well as National Development Plans and Education Strategy Statements. Reflective of the Culliton Report (1992) the Green Paper in its very first sentence identified the need ‘in an enterprise culture, to equip students with the ability to think and solve problems – rather than just with an accumulation of knowledge’ (Department of Education, 1992, p.3). It went on to detail the need to ‘broaden education’ in the context of ‘education for work’ as ‘in the business world there is wide recognition that many young Irish people tend to lack technical skills, communication and inter-

personal skills, language skills and the critical thinking, problem-solving ability and individual initiative than an enterprise culture requires' (Department of Education, 1992, p.11). The necessity for vocational education and training was emphasised on the basis that 'economic growth and industrial development is dependant...on the availability of qualified personnel with the necessary technical and vocational skills and competencies' (Department of Education, 1992, p.109). The relationship between education and economy was highlighted early on in the follow-up White Paper stating that:

The contribution of education and training to economic prosperity has been underlined in successive national understandings with the social partners and in independent studies carried out by, for instance, the National Economic and Social Council and the OECD...investment in education is a crucial concern of the state to enhance Ireland's capacity to compete effectively in a rapidly changing international environment (Department of Education, 1995, p.5).

Furthermore it went on to state that 'expenditure on education and training is an investment in economic growth and improved social cohesion' (Department of Education, 1995, p.8). This was reflected in the first National Development Plan (1994-1999) which stated that education was to provide 'a workforce which is adaptable and innovative, with high levels of skills in technical and commercial fields' (Government of Ireland, 1993, p.7) and in DES Strategy Statements which specify contribution to economic prosperity as one of five high-levels goals along with social inclusion amongst others.

Much of the pressure for change can be seen as emanating from outside the system with Lee (1989, p.627) drawing attention to the influence of history and 'the mentality of a dependent people engaged in permanent mimicking of their presumed betters.' The influence of the OECD may be seen in the context of wider external and EU influences including the Lisbon agenda (EU, 2000) which set out the aspiration that the EU was to become 'the most competitive and dynamic knowledge-based economy in the world, capable of sustained economic growth.' Galvin (2009) sees the unique role which the OECD has played in the seeding and orientation of educational policy as one of the defining features of educational policy and policy making in Ireland over the last forty years beginning with Investment in Education, continuing with the OECD review (1991) and reflected in the Green and White Papers of the mid 1990's. He attributes this unique role to the vacuum created by a perceived failure of the Department of Education to be proactive and to drive policy making internally during this time span. Ball (1999, p.200)

suggests that the OECD (with the World Bank) has come to represent ‘the accepted, collective wisdom of the west’ and that these agencies play a significant part in disseminating the ‘new orthodoxy’ which links the convergence of education and economic functions underpinned by neoliberalism which applies the ideology of the market to educational provision; educational activities becoming saleable products and students seen primarily as consumers. As reflected by Gleeson and O’Donnabhain (2009) this ideology has also led to new models of accountability which assess the efficiency of the system and the actors within it rather than the quality of the learning processes and outcomes. Based on their analysis of the four Department of Education Strategy Statements published between 2000 and 2009 they cite how fourteen of the thirty-five objectives in the most recent Statement included explicit reference to ‘the EU concrete future objectives of education and training systems process’ based on the Lisbon agenda.

The industrial perspective may also be considered as a further example of influence external to the field and community of education. As education for the economy and human capital formation were being prioritised in the 1990’s there was a parallel heightening of interest in educational provision from this sector illustrated by the response of the Irish Business and Employers Confederation (IBEC) in the wake of the Green and White Papers. This response advocated a broadly based education ‘on which more specialist knowledge and skills can be built at a later stage and as the need arises’ (IBEC, 1996, p.21). Although IBEC saw the enterprise sector as having a role in an economically relevant education system it prioritised transferable skills, flexibility and the preparation for continuous lifelong learning over a narrow conception of learning and skills, emphasising that ‘new organisational structures mean that individuals at all levels have greater personal responsibility, are increasingly engaged in teamwork, and are constantly required to up-date their knowledge and skills’ (IBEC, 1996, p.19). Although highlighting the ‘enterprise’ perspective (IBEC, 1996, p.1), the preference for a broad education suggests that what was really desired by this sector was an enhancing of general education provision – this is not the clarion call for narrow skills which might have been expected from a business/industry perspective. O’Sullivan (2005, p.148) provides evidence of this ‘means to an end’ perspective in the context of Investment in Education outlining that ‘when the expansion, justified on the basis of the human capital paradigm, did occur it was to the traditional secondary schools, most identified with the theocentric paradigm, that the pupils flocked.’

Both perspectives would seem to support the view of education for the economy and the associated human capital discourse as a means to an end (enhanced general education) as much as or more so than as an end in itself. O'Sullivan identified 'Second Wave Human Capital Theory' as a feature of the 1990's. This perspective sees education as augmenting the capacity to handle new technologies characterised by government investment in education and technology areas. As such it can be seen as reflected in the policy initiative (Schools IT2000) which forms the focus of this work: the establishment of the Scientific and Technological Education Investment Fund (1997) enabled expenditure on Schools IT2000 in the years immediately following the publication of the Green and White Papers.

A number of commentators have reflected on the impact of the prominence of education for the economy and the related human capital discourse. Drudy and Lynch (1993, p.214) see that 'Irish education has been guided for the last twenty-five years by the principles of human capital theory, informed by what might be called technical functionalism.' In similar vein Gleeson (2004, p.109) sees that it has facilitated the dominance of the 'technical mentality' or in House's terms 'the technological perspective' where educational innovation is 'conceived as a mechanistic process [where] the concern is economic and the primary value that off efficiency' (House, 1981, p.26 cited in Gleeson, 2004, p.101). O'Sullivan (1992, p.464) drew attention to the perceived narrowing effect noting that the Irish frame of education and social discourse has become increasingly 'coterminous with the theme of education and the economy' with the result that 'cultural identity, language, civic competence and moral development were excluded as themes.'

The Policy Context

This section sets out to address some salient features of educational policy making in the Irish context. It argues that policy making generally has been based on an essentially top-down centralised model with the aspiration of consensus via a partnership approach. The prevalence of these factors in the context of educational policy making specifically will be explored.

Gleeson (2009, p.63) documents how various analysts have concluded that Irish policy making generally has been 'centralised, fragmented, secretive and ad hoc in character.' This can be understood in light of the centralised model of government where control over

policy was exercised by prominent civil servants socialised into a system that ‘subtly discouraged innovation’ (Lee, 1989, p.557) and which prioritised day to day affairs over longer term planning. In the context of an emphasis on the short-term Garvin (1992, p.231) outlined how ‘decades of neglect are made up for by crash programmes of reform’ suggesting the ad hoc nature of provision and a culture which did not value planning for the long-term. Cross departmental policy making is seen to be characterised by fragmentation and a lack of joined up thinking or linkages between the various departments. Lee (1989, p.635) outlined how ‘government departments are fragmented within and between themselves...fragmentation is endemic in all administrative structures but it is particularly subversive of the national interest in a small retarded country.’ Gleeson (2009, p.65) saw the introduction of Programme Managers during the 1990’s as evidence of ‘serious efforts at reform’ in an attempt to address issues on a cross-departmental rather than on a departmental basis. In this regard the emphasis by Programme Managers was to be on issues rather than on departments but this role was discontinued when Labour left government in 1997.

A social partnership approach to policy making was adopted in the mid 1980’s when against a back drop of difficult economic circumstances, the Government and the various trade unions came together to produce the Programme for National Recovery (1987) which sought to regenerate the economy and improve the social equity of society through their combined efforts. The National Economic and Social Council (NESC) was pivotal at this time; providing a forum for discussion of the principles relating to the development of the national economy and to advise the Government on the application of these principles. The Council was seen as central to ensuring acceptability of proposals and implementation without conflict. Gleeson (2009, p.67) comments that this partnership based approach ‘was born out of economic adversity rather than the European Union’s (EU) advocacy of a partnership approach to regional planning and development.’ Since this time a further six programmes have been developed using a social partnership approach. These are: the Programme for Economic and Social Progress (1991); the Programme for Competitiveness and Work (1994); Partnership 2000 (1996); the Programme for Prosperity and Farness (2000); and Towards 2016 (2006). The partnership strategy has also been used in the preparation of the three most recent National Development Plans: 1994-1999, 2000-2006, and 2007-2013.

The beginnings of the social partnership approach within education can be traced back to the then Minister for Education (1982-1986) Gemma Hussey who in her first address to the Irish Parliament stated that ‘in order to restore a sense of purpose and a sense of direction to the crucial area of educational planning, I have taken the unprecedented step of involving the major groups in education, parents, managers and teachers, engaging them in a working party in my department in the planning process’ (Dail Reports, vol 343, col.2142, 1982). Prior to the mid 80’s curriculum planning was a centralised process within the Department of Education, as reflected by O’Connor (1986) who noted that the original education partners in Ireland were the Church and the State. Although some developments were already in train by the time of its review the OECD (1991, p.75) noted that ‘one of the missing or under-developed links in the curriculum planning and decision-making system is the participation of the social partners’ and argued that the participation of employers, community groups and parents ‘would be a means whereby the current preoccupation with book and verbal knowledge accompanied by instructional modes of teaching and regurgitative practices in assessment and examinations could be reduced.’

The promotion of social partnership as a model of governance within education was exemplified by the constitution of the Interim Curriculum and Examinations Board (CEB) in 1984. The CEB subsequently became the National Council for Curriculum and Assessment (NCCA) in 1987 and the 1998 Education Act established a statutory role for NCCA which became effective from July 2001. The main brief of this body is to advise the Minister for Education on matters relating to Curriculum and Assessment. Gleeson (2009) notes that the establishment of the NCCA on a statutory basis in the 1998 Education Act bears testimony to the satisfaction levels of the main education partners with this model which is representational to an exceptional extent by international comparisons. Generally in countries which have national Curriculum and Assessment bodies the majority of members are nominated by the Minister for Education rather than by the ‘partners’ in education. In respect of the NCCA the Teacher Unions and School Management bodies nominate fourteen of the twenty-five members of its Council. Apart from Ministerial and Department of Education nominees the remaining members consist of representatives of the National Parents Council (NPC), the Irish Business and Employers Confederation (IBEC), the Irish Congress of Trade Unions (ICTU), Foras na Gaeilge, the Centre for Early

Childhood Development and Education and the Irish Federation of University Teachers (IFUT). The NCCA has to date operated on a system of designated committees on a representational basis, the role of these committees being to produce curriculum documents for consideration and potentially for approval by the NCCA Council.

The original intention of social partnership was to broaden the base of decision making and to pave the way for smooth implementation due to increased ownership at the ground level. Gleeson (2009) contends that in the education sector this has been more successful at the macro than at the ground level and has in effect facilitated top-down reform via nominated representatives to the perceived exclusion of the practicing classroom teacher and the general grass roots. Two particular issues have been raised in relation to the model of partnership utilised in the Irish context: the dominance of strong sectoral interests and the use of partnership for the legitimation of policy. Gleeson argues that the representational nature of the NCCA provides an excellent example of how partnership in the Irish context is predicated on a sectoral agenda and that along with the school management bodies the teacher unions, who are particularly strong by international standards, effectively control the NCCA and its committees, exercising a virtual veto over curriculum development and thus tending towards maintenance of the status quo. In this regard the primacy of sectoral interests deflects attention from bigger picture issue and tends towards a conservative manifestation of decision making rather than a shared understanding of the common good. Given the inevitable familiarity between the sectoral representatives due to, as espoused by Granville (2004, p.93) the ‘usual suspects syndrome’ Gleeson articulates the likelihood for ‘cosy consensus’ and ‘compromise borne out of familiarity’ (Gleeson, 2009, p.314) rather than on the basis of critical questioning of taken for granted values and assumptions.

Legitimation of policy is based on the desire to achieve consensus through partnership so that policy can be seen as legitimate because it was negotiated via this route. It centers on the legitimation of the decision making process and the symbolism of change and innovation. Granville (2004) drew attention to the role of the NCCA in the legitimation of top-down curriculum reform in the Irish context. He saw that the NCCA course committee structures are implicit in their acceptance of the cultural parameters of the status quo being established on the basis of traditional formal subjects and that they achieve ‘their greatest potency in the realm of symbolism’ providing ‘theatres of action, negotiation and

diplomacy wherein the education partners act out dramas of conflict and consolidation' (Granville, 2004, p.87). Both Gleeson (2009) and Granville (2004) acknowledge that the model of social partnership in place in Ireland has achieved much but that there is a need to reassess and review the form of partnership in place and to explore new models of participation which are more inclusive (especially as Gleeson contends there is little sense of participation on the part of the education community in curriculum decision making) and which challenge the sectoral agenda by introducing a wider range of views and experiences thus providing a stronger challenge to the prevailing 'insiders' and the dominant status quo.

The report of the OECD Examiners (1991) and the Cromien report (2000) provide the most significant examinations to-date of issues effecting educational policy making in the Irish context. The lack of attention to planning by the Department of Education emerged as a common theme across both publications with the OECD (1991, p.40) noting an 'in-built resistance to creating any permanent machinery for facilitating the policy-making process' and Cromien drawing attention to the adherence to day-to-day pressures to the detriment of long term planning. Over centralisation, an antiquated structure and traditional work practices were seen by Cromien as contributing to 'a vagueness' in respect of the Department's policy role:

There is a vagueness, caused by the absence of clear structures, about where in the Department policy is formulated and whose responsibility it is to formulate it. We were struck by the absence in certain line sections of any obvious thinking about policy formulation and, indeed, by their perception that they had no responsibility for such matters. The establishment of the Strategic Policy Unit, and a general vagueness about what its functions are, have contributed to this. The fact that certain policy sections which used to be in line divisions were transferred to this Unit when it was set up may have provided some excuse for this approach (Cromien, 2000, p.3).

The ad hoc nature of provision was noted with schemes found to emerge in a haphazard manner and often determined elsewhere through interest groups (Cromien, 2000) such that expansion was seen as occurring in a piecemeal fashion resulting in a patchwork of structures (OECD, 1991). The breath of activities undertaken by the Department was evident from the Cromien report reflective of the highly centralised approach to educational provision resulting in an organisation which was overworked and thus incapable of anything other than 'firefighting':

The Department is involved in many details of the operation of the education system which by their sheer number tend to absorb much of the Department's time and effort in reactive activity..... The current workload is therefore skewed towards those operational activities

which, although critical to the ultimate delivery of education, defer attention from longer-term and strategic activity in the sector (Cromien, 2000, p.2).

Because of day to day pressures in sections, not enough time is given to standing back from the work and assessing where the Department of Education and Science is going and what are its medium-term plans for education. Sections are too busy keeping up with the current workload to challenge whether what they are doing is being done properly or, indeed, whether it is worth doing at all (Cromien, 2000, p.3).

Reflecting more broadly on the Irish education system Ryan (1988, p.6) concluded that ‘it has retained its traditional structures and made fewer concessions to change than any other institution in society.’ Shedding some light on why this may be the case the OECD (1991, p.38) identified three barriers to reform in the Irish context: the absence of a purposeful central authority having the political will, administrative capacity and financial resources to formulate and implement reforms; the presence of powerful interest groups outside the Department resulting in the need to negotiate initiatives with such interest groups; and the intrinsic complexity of the system. Coolahan (1995) also identified the perceived negative influence of strong interest groups in arguing that Irish educational policy making has traditionally been cautious and conservative. A cautious attitude by civil servants based on the desire to protect the Minister for Education from controversy and the nature of cabinet decision making, requiring negotiation with other departments especially Finance were also proposed by Coolahan as contributing factors.

Although there are very few examples of the mechanics of policy making within the literature Harris (1989, p.17) does detail ‘a certain pattern of approach’ from his experiences as special adviser to three different ministers of education during the mid to late 80’s. In broad terms this pattern entailed: setting up by the minister of a departmental working group representative of ‘key officials’ both administrators and Inspectors; drawing up of draft proposals by the working group encompassing consultation with outside bodies; and, submission of proposals to the minister. Where government decisions were needed documentation was prepared and circulated to other relevant departments often leading to protracted negotiations with the Department of Finance whenever financial considerations were involved. Once a decision was taken at government level the working group became responsible for enacting the decision: ‘this usually involved arranging for the launch of a policy statement or discussion paper, generally by means of a press conference’ (Harris, 1989, p.18). This approach to policy making sits within what O’Sullivan (2005, p.115)

describes as the ‘theocentric paradigm’ since the decision making is in the ‘hands of a knowledgeable few’ with an overlay of consultation ‘in which the changed process of policy making [is] represented as transparent, accessible and democratic.’ Although the theocentric paradigm was initially manifest within the workings of the Church and based on Christian values O’Sullivan notes that in its transfer and application to the mainstream religious authorities are replaced by those deemed to be knowledgeable and expert in the secular domain and that papal and episcopal pronouncements were displaced from the 1960’s on by World Bank policy, EU and OECD reports, and anything considered best practice elsewhere.

In addition to detailing the mechanics of policy making Harris (1989, p.19) also described the evolution of policy over a twenty year period leading to the setting up of the CEB (now the NCCA). As well as illustrating the complexity of policy making Harris saw how policy decisions were at all stages ‘largely political’ with ‘different approaches being adopted as different governments came to power and reflecting the different priorities of the respective political parties in office.’

The Role of Politics, the Minister for Education and the Department of Education

The following section will consider the role of politics and of the Minister for Education and his/her Department in respect of educational policy making in the Irish context.

The Minister for Education plays a significant role in education policy formulation and implementation in the context of an electoral system in which ‘populist’ politics are seen to flourish with an emphasis on ‘local’ (Garvin, 1992) achievements in the short-term with a view towards re-election. The OECD (1991) noted the multitude of roles held by the Minister: as constituency TD serving the local needs of those who elected him/her; as having specific Departmental responsibility; as contributing to general government decision making; and as a member of the Dail having the obligation to attend, speak and vote as required by the party. Against this backdrop the OECD (1991, p.39) concluded that ‘most ministers hold office for too short a time to grow into the post, let alone to initiate long-term strategic plans...permanent contact with grassroots opinion encroaches on the time available for policy formulation and overseeing the work of the Department.’ This view reflects the significance of public acceptance over long-term good which may be

understood as effecting performance in the face of difficult and unpopular decisions. The emphasis on the short-term was also reflected by O'Halpin (1992) who noted the tendency for 'new' incoming ministers to embark on new initiatives with a view towards a political legacy rather than to review the performance of existing provisions:

There is an inbuilt propensity to add to activities rather than to substitute a new for an existing one...Even a 'good minister' may be more inclined to use his or her term of office to embark on new policies than systematically to study how existing ones are performing (O'Halpin, 1992, p.168/169).

The pressure is always to move things along, to avoid trouble, to dampen public dissatisfaction and usually to keep the main interest groups involved happy (O'Halpin, 1992, p.179).

The Minister for Education is constituted as 'corporation sole' responsible to Dail Ireland for the administration of the Department of Education and for all aspects of policy and administration of the education system. As such the Minister and the Government rather than the Department of Education are responsible for policy making and this situation led both Coolahan (1995) and Harris (1989) to conclude that civil servants are inhibited and conservative when it comes to taking risks or introducing change due to their desire to protect the minister from any possible controversy or from potentially tricky Dail questions. The fact that the minister rather than civil servants themselves are responsible for their actions, and that the minister may be called to account for the actions of civil servants was identified by Harris (1989, p.7) as one of the principal factors which makes the Department of Education 'fundamentally conservative.' Harris also pointed out that when ministers only spend a brief period in charge or prioritise the other aspects of their role 'civil servants will tend to become the real decision makers' but that during these periods 'less change tends to take place' (Harris, 1989, p.10/11). O'Halpin (1992, p.180) saw that 'the civil service operates as an influence for continuity rather than for radical change, and for the most part governments are concerned to manage as best they can rather than to innovate in national affairs.' That said O'Halpin saw that civil servants 'cannot but have great influence on policy' as 'they are in a position to control the flow of information upon which a ministerial decision will be based, and even to delay or impede the execution of a policy with which they do not agree.' The 'Special Adviser' role and in particular the quality of his/her relationship with the civil servants was also detailed by Harris (1989) and O'Halpin (1992) as significant in progressing policy.

Gleeson (2009) detailed how in respect of the NCCA relations between the Minister of the day and the Council fluctuated with some adopting a very hands on approach and others paying very little attention. This can also be applied in terms of curriculum initiatives: certain initiatives may flourish under a committed minister with the risk that the particular initiative may be allowed to lapse should that minister move on or should other priorities emerge. O’Buachalla (1998, p.202) drew attention to the significance of support and drive from a number of ‘young ministers’ in the context of the developments in the 1960’s. Overall he viewed the impact of a minister’s contribution to education as dependant on the length of term in office, his/her political perspective on education, party policy and the minister’s status within the party. Familiarity with the education system was considered by O’Buachalla as less important than the political nous needed to negotiate sensitive issues.

The primacy of the minister is reflective of the highly centralisation system of administration with the Inspectorate consigned to an, at best, supporting role in the context of this highly centralised and controlled environment, the OECD (1991, p.44) noting that ‘the inspectors are not autonomous but civil servants employed by the Department of Education...their reports are not published and are mediated by the Department.’ Both the OECD (1991) and Cromien (2000) noted the necessity to put an infrastructure in place which would allow the Department and its Inspectors to adopt a more strategic role, Cromien (2000, p.ii) noting that ‘for perhaps historic reasons the Department has maintained a strong system of control which has led to an over-centralisation that is outdated and is out of line with policies to devolve responsibility in other parts of the civil service.’ This revised structure was predicated on the removal of certain functions, particularly control of state examinations, and a more devolved approach through the establishment of regional offices. A Strategic Policy Unit was proposed by Cromien as central to engaging the Inspectorate in research and policy making in a coherent rather than a haphazard manner as per arrangements at the time. Gleeson (2009) documents how these proposals resulted in a number of developments such as the publication of *Implementing the Agenda for Change* (Department of Education, 1996), the Department’s first Strategy Statement (DES, 1998), a strategic plan for the implementation of the White Paper and the establishment of the Department of Education Strategic Policy Unit in 1999 although in line with a trend addressed previously he noted that this Strategy Statement made ‘liberal use of technicist and consumerist language’ citing examples such as ‘customer/client

interests and needs’, ‘deliver a high quality education’ and ‘appropriate legislative, financial and accountability frameworks’ (Gleeson, 2009, p.85).

Implementation via Structural Fragmentation

Many of the issues already addressed including the dominance of the technical mentality, the influence of the economic imperative and the prevalence of sectoral interests can be seen as reflected in a fragmented approach to educational policy making and implementation. The perceived anti-intellectual bias, the dearth of philosophy and the corresponding neglect of the ‘big picture’, the influence of politics and the centralised system of administration via the Department of Education are proposed by Gleeson (2000) as effecting a prevailing fragmentation and discontinuity within Irish education.

Fundamentally fragmentation can be understood as being about structures and the relationships or non-relationships which develop between agencies and their actors in the context of these structures. It is also reflected in how schooling is broken down by sector and school type and how the curriculum is compartmentalised by subjects. The chasm between primary and post-primary education is cited by Gleeson (2000) as a practical examples of structural fragmentation in the Irish education system. Fragmentation is also related to issues of power and control as reflected by Drudy and Lynch (1993) in the context of the complexity of school types and management structures at post-primary level, also reflective of the breakdown in the academic versus vocational traditions. It is also reflected in gender, denominational and social class based divisions. The various categories of schools are in effect competing for the same resources although Harris (1989) outlines how, reflective of the diverse arrangements which have arisen, differences exist in the way the Department may take decisions and institute policy in the various school types, coupled with a variety of funding arrangements. As highlighted previously drawing on Lee (1989) the relations between the Departments of Education and Finance regarding the availability of funding for educational projects can also be characterised in this way as can the demarcation between the administrative side of the Department and the Inspectorate and between the primary and post-primary Inspectorate. Similar fragmentation exists in the division of responsibilities between the Department of Education/DES and the NCCA, and in respect of the division between the twin purposes of curriculum and assessment within the NCCA itself. The role of the minister as ‘corporate sole’ and political factors which

impact on the prioritisation of issues can be seen to effect fragmentation and discontinuity especially in the context of ministerial changes.

The extent of structural fragmentation in the Irish context has been recognised by various commentators. The OECD (1991) noted the divided school system and corresponding curriculum as split both vertically (primary-secondary) and horizontally (academic-vocational). Cromien (2000, p.11) acknowledged the apparent logic in structuring the Department of Education around the three pillars of primary, post-primary and third level education but questioned whether this was the best means of organisation in 'modern circumstances.' Gleeson (2009, p.279) drew attention to what he saw as 'clear evidence' of fragmentation in the DES Strategy Statements where the five high-level goals are treated independently, ignoring the overlap between goals such as equity and quality and between personal and social development and whole curriculum. Furthermore the implications of fragmentation are pursued by Gleeson drawing on Cornbleth (1990) and Grundy (1987). Cornbleth (1990, p.21) details how the adoption of technocratic approaches leads to an 'engineering mentality [where] everything is analysable into constituent components...seen as self contained units' which may be viewed as being to the detriment of joined up thinking and to non-subject based or integrated curriculum. Gleeson also draws attention to the perceived de-skilling of teachers in the context of curriculum planning due to the reliance on assistance from 'experts' such that there is a division of labour between the curriculum designers and the curriculum implementers (Grundy, 1997 cited in Gleeson, 2009) as exemplified in the Irish context by the allocation of responsibility for design, implementation and assessment to three separate agencies.

The nature of curriculum reform in Ireland as espoused by Gleeson (2004, p.121) can be seen as contributing to fragmentation due to the increased proliferation of centralised implementation groups or agencies. Reflecting the technical approach he details how in Hord's (1995) terms 'Irish curriculum reform has been characterised by successive launches of 'quick fix' approaches and by increased state involvement, culminating in an unprecedented amount of legislation and the proliferation of centralised implementation groups.' The existence of such groups can have the knock on effect of generating 'turf wars' as they set out to mark their territory and establish their sectoral boundaries. Such territorial warfare was detailed by Gleeson (2000) in the context of tensions between the

Department and the newly established CEB and by Gleeson (2004) in relation to subject related issues citing the examples of technology education, the possible dropping of History and Geography from the post-primary core curriculum in the mid 1990's and issues to do with the Irish language as a curriculum subject.

Policy Discourses

As outlined in the previous chapter technology policy for schools is now a significant component of educational policy making in both developed and developing countries as reflected by the multitude of technology related policy pronouncements from the mid 1990's on. Such policy developments have generally reflected a number of associated discourses which have been the subject of analysis and critique by commentators such as Bruce (1993), Conway (2001), Fitzpatrick and Conway (2004), Zhao et al. (2006) and Selwyn (2011) amongst others. Complementing the broad contextual factors which form the backdrop to Irish educational policy and provision these dominant discourses on ICT policy and educational change provide an appropriate and useful point of reference for the analysis of ICT policy development and implementation in the Irish context which forms the focus of this work.

Bruce (1993) identifies the prevalence of *innovation-focused* and *social system-focused* discourses in his analysis of the implementation of innovations which he sees as operating in parallel to the process of change in educational contexts. This process is underpinned by the challenge of meshing new ideas with well-established beliefs and practices. In the context of technology in education Bruce (1993) draws attention to the 'dream' and the 'nightmare' versions of the use of computers in education as identified by Lepper and Gunter (1989). The 'dream' is characterised by visions of how computers will lead to the restructuring of classrooms, greater engagement, more challenging activities, development of thinking skills and deeper understanding of subject matter. The 'nightmare' scenario sees few positive changes focusing instead on existing social practices, power relationships, surrounding contexts, conflicting goals and cultural values. Such a *rhetoric v. reality* type discourse is complementary to Bruce's *innovation v. social system* perspective, the differences between both views being significant and thus difficult to reconcile. Similarly Selwyn (2011, p.12) identifies what he terms *booster v. doomster* and *utopian v. dystopian* discourses which closely reflect the expectations and realities evident in both the *innovation*

v. social system and the *rhetoric v. reality* analyses of technology related discourses. As such the *booster* or *utopian/techno-utopian* versions of this analysis are characterised by a strong faith in the capacity of technology to improve education (a technology is ‘good’ orthodoxy), whilst the *doomster* or *dystopian* view extenuates the potential for damage to education or society from an uncritical acceptance of technology and for a perceived intellectual ‘dumbing-down’ associated with its use. However Selwyn (2011) recognises the polemic nature of these perspectives and that much of the debate regarding technology related educational policy and practice takes place in a ‘middle ground’ which is characterised by consideration of specific educational advantages of technology use and specific (rather than abstract) hopes for schools and schooling. Amongst these hopes are for ‘better learning’, fairer learning via enhanced access to educational opportunities (‘discourses of democracy’ in Selwyn’s terms) and for enhanced teaching and pedagogy. In the context of the ‘messy realities’ of school based implementation Selwyn (2011) also argues for the prevalence of various ‘discourses of deficit’ as explanations for the apparent failure of technology in schools to meet the expectations evident in the *booster* or *utopian* sides of these discourses.

The *innovation-focused* discourse as developed by Bruce (1993) is associated with a techno-centric perspective which tends to give centrality to the technical object of the innovation. In other words, technology is seen as leading to improvement and change and to directly changing social practices. From this perspective change is seen as positive, and the path to its enactment is viewed as straightforward and linear. As detailed by Bruce (1993, p.12):

Innovation-focused discourse assumes not only that change is possible and that it does occur, but that the goal of the discussion is to articulate the path to change. Thus its stance is essentially that of the engineer. Goals are identified and contrasted with existing practices. Technology is described in terms of what it can do in achieving these goals, and only incidentally in terms of what it is actually used for. There are frequent references to efficiency, productivity and new ways of thinking. More often than not, positive examples are highlighted. Problems are presented as remaining obstacles to be overcome, not as reasons for ultimate failure. The tone is often visionary, rejecting detailed analyses of current practice as being too conservative.

On the other hand the *social system-focused* discourse gives primacy to social relations and organisations emphasising ‘the underlying social, cultural, economic and political processes that undermine innovations, resulting in negative outcomes or, more often, precluding any

change at all' (Bruce, 1993, p.10). Thus the social system discourse see discussion of technologies as too often isolated from an understanding of the settings in which the technologies are used and is more concerned with contexts of use rather than technologies per se. This perspective sees change, where it does occur, as incremental and slow. Rather than optimism and revolution it tends towards pessimism and the reinforcement of established patterns. Bruce (1993, p.13) outlines how:

System-focused discourse thus has a stance complementary to the engineering stance of innovation-focused discourse. It takes on the role of the critic. It places little faith in visionary goals, or in the methods of reaching these goals. Instead of looking to the future by articulating a plan for change, system-focused discourse looks at actual use and asks whether anything has changed. It is less concerned with what the technologies could in principle do and more with what they are actually used for in ordinary contexts. Problems are seen not as obstacles to overcome, but as indicators of underlying systemic processes that the innovators have not even addressed. It is skeptical of claims about the impact of innovations and assumes that, absent strong evidence to the contrary, everything is likely to continue to be the 'same'.

Rather than maintaining separate and parallel perspectives on these two discourses the integration of both perspectives contributes more positively to the understanding of social change and innovation. This is significant in terms of implementation where Bruce (1993, p.16) outlines that: 'In contrast to an innovation focus or a system focus, we need to conceive of the adoption of an innovation as a process in which innovations are incorporated into a dynamic social system that may lead to changes in the innovation, acceleration of change in the social system, or no effect at all.' This leads to a distinction between the intended aims or goals of the innovation from the developers or policy makers' perspective and those achieved in practice. In this regard Bruce (1993, p.16) distinguishes between *idealization* and *realization*: the idealization being the innovation set into an ideal context and used in an ideal way from the developers' perspective, and the realization being what happens in practice within a given social system. As summarised by Bruce (1993, p.16) 'the distinction between real and ideal suggest a process, the realization process, whereby the innovation leads to practices potentially different from those intended by the developers.' From this perspective the active agents are the participants in the setting in which the innovation is placed rather than the innovation per se. These participants will interpret the innovation and re-create it so as to adapt it and fit it with institutional and physical constraints and with their own goals and practices. This signifies the significance of social context in shaping how an innovation is realized in practice and highlights how a developer's understanding of the context of use is more significant in effecting change than

their understanding of the innovation per se. One idealization can thus give rise to any number of realizations depending on the social contexts in which is enacted. This led Bruce (1993, p.19) to conclude that the adoption of technologies: ‘must be understood in terms of the social contexts of potential use, not just in terms of the speed, efficiency or polish of the new innovation per se.’

Selwyn (2011) advanced a very similar perspective in distinguishing between technological and social determinism thereby challenging what he describes as the ‘orthodoxy of technological determinism’ which posits that somehow new technologies have ‘inevitable internal logics of development.’ Instead he outlines how there can be no pre-determined outcome to the development and implementation of technologies as schools are not neutral contexts but that they are ‘subject continually to a series of complex interactions and negotiations with the social, economic, political and cultural contexts into which they emerge’ (p.41). In this regard Selwyn (2011) ascribes greater agency to the non-technological processes which shape implementation rather than to the technological artifact per se but recognises that a purely determinist perspective (either technological or social) does not provide a sufficiently sophisticated take on the analysis of digital technology and schools. In moving his analysis to the ‘middle ground’ Selwyn (2011) draws on ‘anti-essentialism’ which views technology as malleable and subject to interpretation but details what he describes as an anti-determinist approach as most appropriate to the understanding of technology implementation in schools. Anti-determinism posits that the socially shaped understanding of technology should be to the fore offering a corrective view to the analogy of technology as a closed ‘black box’ whose effects cannot be easily controlled.

Zhao et al. (2006, p.686) reflected the dominance of an *innovation-focused* discourse based on their analysis of the national technology plans from thirteen nations. In analysing these plans they documented:

A utopian tone, an unqualified extremely optimistic view of technology. Without exception, all technology plans operate as if all technology will cure all educational ills. Technology is believed to be able to greatly facilitate educational reforms, improve student achievement, and thus solve social problems and achieve democracy and economic competency.

Consistent with this and with the innovative discourse Zhao et al. (2006) also noted a focus on the ‘hard’ aspects of ICT such as hardware and structure rather than on the ‘softer’ aspects such as teacher development and school culture as might be associated with the social practice discourse. This lack of attention to the enabling conditions reflects how ‘technology is often presented in a rather simplistic, naively optimistic fashion’ (p.689) and reflective of techno-centric philosophies (such as the *innovation-focused* discourse and technological determinism) ‘once allowed into the classroom [it] can release its own miracles’ (p.693). Such an understanding, as reflected upon by Zhao et al. (2006) thus fails to take account of key educational factors or to reflect the complexities of cultures or the nuances of educational change across educational systems as might be more adequately reflected with the adoption of a social practice based perspective.

Summary and Conclusion

The context of educational policy and policy making in Ireland illustrates a complexity reflective of the system itself. Such complexity has been noted and commented upon by many commentators. This chapter has identified and addressed the most significant aspects of this complex contextual backdrop including the influence of the past, the lack of a clearly articulated philosophy of education, the theme of education for the economy and human capital formation, the influence of the OECD, the essentially top-down approach to policy making including the role of partnership, the influence of politics and of the minister and Department of Education. Many of these aspects can be seen as influencing the prevalence of structural fragmentation within the Irish system of education. This chapter aims to situate the study of Schools IT2000 in the broader context of education policy development and implementation in Ireland as any subsequent analysis must be grounded in the context against which development and implementation of this particular policy takes place. It is also inevitable that many of the aspects of context identified will bring their influence to bear in respect of Schools IT2000. More generally two dominant discourses are evident in the literature in respect of ICT policy and educational change: the techno-centric or *innovation-focused* discourse and *social system-focused* discourse. Coupled with the broad contextual factory evident in the Irish context these competing discourses provide an appropriate frame of reference for the analysis of ICT policy development and implementation in the Irish context as enacted via Schools IT2000.

Chapter 3 Educational Technology in Ireland: History and Context

Introduction

The development of any policy regardless of its focus occurs against a backdrop of external forces. These forces include social, legislative and economic concerns which in turn can result in the adoption or rejection of different imperatives. Marton (1988) contends that the analysis of any policy development can only be meaningfully undertaken by first examining the historical and contextual antecedents. Chapter 2 has set the broad policy making context in Ireland. This chapter (Chapter 3) sets out to document and analyse the significant developments in relation to technology in the Irish educational context during the period 1970-1990 so as to provide the historical backdrop and context for analysis of the more significant developments in the late 1990's which form the focus of this work. The significance of history has been identified by Cornbleth (1990, p.112) who argues that 'regardless of the structural particulars of an education system, past experience or history necessarily shapes present interaction.' Creswell (2005, p.79) posits that there is a distinction between reviews of literature undertaken for quantitative and qualitative studies. In relation to quantitative research, he suggests that the literature review is used at the start of the research to provide a justification for the study, to set out the rationale and to provide 'prediction to confirm or disconfirm the results'. In comparison to this preliminary positioning of the review, Creswell suggests that with qualitative research the literature review becomes a more iterative and ongoing process that is used to continually support the interpretation and understanding of the research data, in this case the historical background and context providing a frame for the analysis of the more recent developments and the related research data.

Whilst Schools IT2000 represents the first formal state wide policy for ICT in Irish schools developments in technology for educational purposes can be traced back to the 1970s when interested teachers began thinking about the potential of the then developing technology. Between the early 1970's and the late 1990s there have been a number of distinct emphasises in relation to the potential role of technology within education. Initially the focus was on the teaching of the computer and on programming as a distinct subject (in effect 'computer science') however over time consideration was granted to the teaching of computer application ('computer studies') and to the possibility of integrating technology

into all subjects across the curriculum. Related to this there has been significant debate and consideration in relation to meeting the perceived needs of those with a particular aptitude in the area of computers as well as providing opportunities for the development of 'computer literacy' type skills for the wider gambit of those participating in formal/compulsory education. Thinking has developed and changed over time and there has been significant discourse and debate as interested parties attempted to influence those in positions of responsibility and power in relation to potential future policies and directions. This is reflective of the interplay between top down and bottom up initiatives which have shaped and characterised developments. However, despite the significant debate, many of the issues are recurring and it may be argued that there has been a significant lack of progress in defining the role of technology in Irish schools.

Initial Developments: 1970's

O'Shea (1983) recounted how the microcomputer came more and more into use in the 1960's and by the latter stages of this decade were almost commonplace in institutions such as banking, insurance, government departments and universities. The first moves to explore the potential of such machines in Irish primary and post-primary education came at a Department of Education summer course in University College Galway (UCG) in 1971, provided by a Professor from Loughborough University of Technology in England. The following Christmas a seminar was held in Dublin and after another course in Galway in 1972 the Computer Education Society of Ireland (CESI) was set up in January 1973. Initially the CESI was comprised of very computer orientated teachers who according to Brady (1987) were more interested in the technology than the educational implications and who tended to have mathematical backgrounds or to teach computer science. However the CESI went on to play a significant role in the development of computer education more generally in the subsequent three decades, functioning as a cross between a subject association (focusing on teaching/learning about computers and eventually ICTs) and an educational pressure group dealing with pedagogical issues around the entire school curriculum including teaching and learning with the aid of ICTs (Oldham, 1998).

In these early days enthusiastic teacher's borrowed time on commercial or university owned computer systems and often spent lunch times or after school preparing punch cards with interested students. According to O'Shea (1983) the two main obstacles to progress in

computer education in the 1970's were the lack of teachers and computer facilities. The former was addressed to some extent by the provision of a Postgraduate Diploma course for teachers by Trinity College Dublin in 1973. In the early years of this course the numbers were relatively small (about 20 per course) but by the late 70's demand was such that an upper limit of one hundred students was placed on the enrolment numbers each year. According to Kelly (1977a) the CESI concerned itself with two main aims at that time: the provision of training for teachers and the introduction of computer studies into the second-level curriculum. As such the emphasis was on the teaching of 'computer science' or 'computer studies' and the training and retraining of teachers was cited as a prerequisite before any real progress could be made (O'Shea, 1983).

Courses provided at this time both by third-level institutions and by the CESI (in Galway, Swords in Dublin and Limerick) were hands-on in nature and largely devoted to programming in a context where schools rarely possessed their own computer equipment (McGarr, 2009). Writing in the May 1977 CESI Newsletter Kelly documented that the CESI was:

Successful in organising a number of training courses for teachers. These courses are usually designed to cater for teachers who have some experience of computing as well as those who are new to the subject. The primary language used is BASIC and every effort is made to include as much practical work as possible in each course (CESI, 1977a, p.1).

The emphasis on BASIC was due to practicalities more so than a reflection of CESI's priorities as at the time there was little educational software available and likewise there were few administration packages in existence. Few schools had access to computer facilities so lectures and demonstrations on educational software and computer-based administration were dealing with visions of the future rather than current possibilities. By contrast it was considered perfectly acceptable at the time to introduce programming by using blackboard and chalk, and hence teachers who had learned BASIC could put their knowledge to immediate effect (Oldham, 1998).

Oldham (1998) describes the high levels of enthusiasm generated by the presence of the microcomputer at a course in 1975. Its influence was also documented by both Brady (1987) who noted how reduced hardware costs allowed schools to purchase their own

equipment which in turn prompted more teachers to get involved and O'Shea (1983, p.21) who noted the particular impact of its price and size:

The micro-computer arrived in Irish schools in 1977. It was of a price and size and lack of complexity that made it attractive to schools. In the years which followed, many schools bought their own systems and as time went on we even heard whispers of schools which had two or three or up to six systems.

However, Kelly (1978, p.1) lamented the lack of attention by the Minister or Department of Education to computer education at a time when a number of schools, most notably in the Dublin area 'realised the relevance and advantage of a study of computer methods and have acquired computer systems.' This growth, although significant in comparison to previous levels, did not have any major impact and as noted by McGarr (2009) computer use at the time remained a peripheral activity.

During the mid-1970s the CESI committee met with Department of Education representatives on a number of occasions including a meeting with the Deputy Chief Inspector with a view to pursuing the inclusion of computer studies in the state curriculum. Documentation relating to this time (CESI, 1974; CESI, 1975) outlines proposals for a pilot computer education scheme in schools, the provision of a 'hardware base' and the establishment of a committee to draft a syllabus for computer studies. Early in 1977 the CESI submitted a draft syllabus for 'Computer Studies' to the Department of Education for consideration. This draft document set out the following course aims:

- a) Develop skills in problem analysis and problem solution;
- b) Give an understanding of the role and limitations of the computer in this process;
- c) Develop an awareness of the social impact of the computer.

Six associated objectives were also outlined written in terms of intended student learning:

'At the end of their course it is hoped that the student will:

1. Be aware of how the computer will affect them in their life after school;
2. Understand how the computer works;
3. (a) Understand the process of problem analysis and problem solution by means of algorithms;
- (b) Be able to use this process to solve problems;

4. Understand the role played by the computer in the problem-solving process, and the limitations of that role;
5. (a) Understand the man-machine communication problem;
(b) Be able to communicate with a computer by means of at least one programming language;
6. Know the history of the evolution of the computer' (CESI, 1977b, p.1).

The draft syllabus also outlined eight content areas, each area linked to the relevant objective or objectives: problem solving, structure of a computer (computer hardware), informatics and data processing, computer control, programming languages, uses of the computer, social implications of computerisation, and history and evolution of the computer. This draft document did not address the extent of intended hands-on experience for students mindful of the significant issue of resources at the time and other than the ability to programme as articulated in objective 5(b) the objectives specified would appear to be achievable without significant hardware access or provision. There was no response from the Department of Education to this submission and Kelly in the Chairman's Annual Report (Kelly, 1977b, p.2) expressed frustration regarding this lack of progress:

The lines of communication with the Department of Education were kept open during the year with a frequent flow of letters at least from our end. Progress of course is frustratingly slow but it is satisfying that at least some finance is forthcoming for our courses. Our keenest disappointment was the absence of a response to the syllabus which we submitted as a discussion document. In addition the ministerial responses to questions asked in the Dail by some few T.D.s at the request of some of our members was typically pallid and non-committal.

Tensions between the CESI and the Department of Education were not uncommon at this time particularly in relation to the funding of courses for teachers. Brady (1987) outlined how many teachers who got involved towards the end of the 1970 availed of the training on offer during their own free time, partly due to a belief that it might lead to new career opportunities or financial reward:

We were motivated more by curiosity about the new technology than by educational considerations...There was also the thought in the backs of our minds that computer expertise might lead to new career opportunities or even financial rewards. In retrospect this was extremely naïve (Brady, 1987, p.47).

However Mackey (1987, p.28) argued that the 'programming approach' taken in these courses had a backlash effect with respect to the educational use of computers by

participating teachers. This approach rendered the computer as irrelevant for most teachers apart from those in the mathematics and science areas with others, as a consequence of the approach taken, deciding that it had no role to play in their school work:

It has to be admitted that in the case of quite a few teachers (especially in the non-maths disciplines) the courses had the opposite effect to what was intended...Most of the teacher training that I have seen to date does little more than turn good teachers into bad programmers...This has little to do with enhancing the educational process...What is needed is not just a knowledge of technology, but the knowledge of how to apply that technology to the education process (Mackey, 1987, p.29/30).

The Mathematics Module: 1980

Despite the CESI lobby for a separate computer studies subject the most significant development at this time came in 1980 when the Department of Education introduced an optional computer studies module to the Leaving Certificate Mathematics curriculum. A delegation from CESI was invited to a meeting with Department of Education personnel in October 1979 at which they heard plans for the 'Leaving Certificate option' which was formalised shortly afterwards (CESI, 1979). Initially it was proposed that *Computer Studies* would be an option under Mathematics for a short time only before becoming a subject in its own right, and that the draft syllabus submitted by the CESI in 1977 would be used as a basis by a newly formed Working Party for development of a syllabus for inclusion in the 1980/81 Department of Education *Clar agus Rialacha* document.

Only schools that had a teacher with some qualification to teach the subject were permitted by the Department of Education to offer this module, and eligible schools were required to have their own facilities or access to facilities with no special grants available for the purchase of equipment. Students were not examined in *Computer Studies* but the course was monitored by the Department of Education and a certificate issued to each student who successfully completed the course. Whilst initially holding reservations regarding the link with Mathematics, Oldham (1998) outlined that overall the CESI was broadly pleased with this development:

We had reservations about the fact that the option was to be part of the Mathematics course - CESI had done its best to de-emphasise supposed links between computer education and mathematics; but there was power in the argument that everyone takes maths, and that some people, namely those transferring from the Higher Intermediate to the Ordinary Leaving Certificate course, actually had time on their hands at that stage...In any case we were naturally delighted that Computer Studies was making an appearance on the curriculum (Oldham, 1998, [Internet]).

Despite welcoming this development it is evident that the CESI considered the *Computer Studies* module as a mere starting point and recognised that its positioning within Mathematics would lead to minimal student exposure. Significantly the CESI newsletter of November 1980 (CESI, 1980) emphasised for the first time the importance of providing computer studies in all schools and for every student in what may be seen as a move towards emphasising computer literacy for all as distinct from programming for relatively few. Drawing attention to the perceived slow pace of progress by the Department of Education the CESI noted that expensive computer studies courses were now being offered by private tutorial schools, mainly in the Dublin area:

We are concerned with the introduction of Computer Studies into all second level schools. It is our wish to see that each student on leaving school, would have at least a basic knowledge of computers and their applications...It is, we feel an unfortunate side effect of the slow progress that the Department is making towards the complete introduction of Computer Studies into our schools that students (or more precisely, their parents) are prepared to pay such high fees for Computer Studies Courses which are now being offered by most of the private tutorial schools particularly in Dublin (CESI, 1980, p.5).

The *Computer Studies* module did not have a set syllabus and schools opting to teach this module were required to submit a syllabus with their application to the Department of Education. In a not dissimilar programme to that outlined by the CESI four years previously, *Clar agus Rialacha* (Department of Education, 1981) documented how the syllabus could contain the following aspects: development of the computer, social implications and use in everyday life, careers in computing, structured diagrams, problem analysis, communicating with the computer, one low level language such as CECIL or CSSP, one high level language such as COMAL, and types of input/process/output devices. Computer resources in schools were increasing at this time due in part to the provision of central funds by the Department of Education in 1981 and 1982. McGarr (2009) reports that by 1981 there were over 600 computers in-situ across the 800 post-primary schools and the Irish Times of June 1983 (cited in McGarr, 2009) reported that due to a bulk purchase by the Department of Education, 37% of all post-primary schools were provided with a 64K microcomputer and a further 25% of all schools had existing equipment upgraded. Breathnach (1984) found that all schools in a sample consisting of 215 schools had between one and twenty-four computers, although the majority of schools responding (197) had twelve computers or less.

By 1986 the Teachers Union of Ireland (TUI) (cited in the CESI Newsletter (CESI, 1986)) reported that over three hundred schools had enrolled students on the *Computer Studies* course, and that over forty schools had availed of a grant aided scheme to purchase microcomputer systems and other enhancements to enable them to offer the module. However there was no definitive data or evaluation of the uptake or the impact of the *Computer Studies* module in Mathematics and by the mid 1980s some commentators including O'Shea (1983) and O'Rinn (1983) began to question its relevance with O'Rinn also noting the lack of a comprehensive fully worked out national plan for computing in schools. In addition Breathnach (1984) offered the following assessment of its status:

The certificate scheme at Senior Cycle level is based on teacher assessment with an element of central (Department of Education) monitoring. The criteria for monitoring are unclear, and the distinctions made are gross, effectively between pass and fail; furthermore the certificates awarded are separate from the Leaving Certificate proper, and therefore of dubious status (Breathnach, 1984, p.14).

Breathnach (1984) completed a survey of schools at this time and found that whilst programming in BASIC was the most common activity teachers actually favoured the use of all kinds of applications packages, most particularly word-processing and educational software, over programming. This lead Breathnach to conclude that teachers were more favourable towards computer studies than computer science partly because they believed that their training did not equip them to teach computer science.

By the time Breathnach published the results of his work the Department of Education in a further development had issued its syllabus for *Computer Studies* at Junior Cycle in *Clar agus Rialacha* 1984 (Section 4). This not for examination syllabus would involve some 70 hours contact time and similar to its Senior Cycle counterpart would be provided in the course of Junior Cycle Mathematics. Oldham (1998) offered two main reasons for the decision not to examine this subject: firstly computer based activities would provide sufficient intrinsic motivation for students hence external motivation via an exam was not necessary, and secondly teachers without a strong background in the subject would be put under pressure if required to teach towards a State examination. The syllabus consisted of seven content areas: data, computer systems, descriptive programming, generic software, imperative programming, control and monitoring, and history (Department of Education, 1985). Breathnach (1984, p.18) remarked that the syllabus for Senior Cycle *Computer Studies* did not accord well with teachers' views of what is appropriate and that this Junior

Cycle equivalent sat well with teachers only insofar as considerable discretion remained with the individual teacher.

The Curriculum and Examinations Board (CEB): 1984

The Interim Curriculum and Examination Board (CEB) was established in 1983 to advise the Minister and Department of Education in relation to matters relating to curriculum and examinations. A 'Consultative Document' issued by the Board in 1984 (CEB, 1984) presented options for Junior Cycle under eight areas of experience rather than subjects (Kelly, 1985). Computer studies was mentioned in one guise or another under four of the eight areas: Mathematics, Communication, Language and Literature, and Science and the New Technologies. However the non-subject based framework was not considered as an appropriate structure for advancement and Boards of Study were established in 1985 to advise the CEB on curriculum, assessment and certification issues related to the various disciplines within the primary and post-primary curriculum. Computer studies fell within the remit of Science and Technology and a *Working Group on Computer Studies* was put in place to consider recommendations of the Board of Studies for Science and Technology. In line with previous criticisms the minutes of a 1985 meeting of this Working Group (WG) reflected dissatisfaction with existing arrangements:

The Working Group considered that the present arrangements for Leaving Certificate Computer Studies as a module in the Mathematics programme is unsatisfactory. The module is in addition to the Mathematics programme, it is not examined as part of the Certificate examinations. The syllabus is not clearly defined and the certification process currently in operation is not adequately monitored. The Junior Cycle Computer Studies module is also part of the Mathematics syllabus. This situation was also considered unsatisfactory as the module is in addition to the existing Mathematics course and is not examined as part of the Certificate examinations. Concern was also expressed at the extent of the published syllabus (CEB, Board of Studies for Science and Technology, Working Group on Computer Studies, 1985).

The WG considered a total of seven recommendations made by the Science and Technology Board of Study and pledged support for some form of computer awareness for all students at Junior Cycle, for development of the use of the computer as a teaching aid in all subjects and for continuous education for teachers at both pre-service and in-service. It was less supportive of the provision of standardised hardware and software in schools, seeing merit in both diversity and standardisation of equipment. At Senior Cycle level the WG considered that a computer studies module should be available to all Senior Cycle students whilst not finding consensus in relation to a full computer studies subject. Some

members favoured a specialised computer studies course leading to third level specialisation whilst others wanted a more general computer studies course as preparation for life. Constraints of staff, equipment and assessment were also identified, along with concerns regarding assessment and accreditation particularly of the practical aspects. The application of computers in business and industry together with some practical experience of applications, software packages and the social implications of computers were seen as essential elements of any syllabus in respect of computer studies.

The computer science versus computer studies debate was gathering momentum at this stage as reflected in the deliberations of the CEB Working Group. Kelly produced a number of documents at this time in which he outlined his views regarding the place of computing in the post-primary curriculum and argued strongly for the inclusion of a computer science type subject at Senior Cycle in which programming would be the key element (Kelly, 1984; Kelly, 1985). He distinguished clearly between computer science and computer studies, seeing computer studies as part of a general education which might be catered for at Junior or Senior Cycle or both. Kelly saw computer science as a specialist subject with a level of sophistication suitable only for Senior Cycle where it would be pursued by a minority of students who wished to follow computer related careers. The TUI (1986) *Position on Computers at Second-Level* emphasised the perceived necessity to introduce computer studies as a full Leaving Certificate subject in addition to a familiarisation course in Junior Cycle. Whilst advocating a softer focus than that of Kelly in respect of computer science, the TUI identified programming as one of four potential components of computer studies in addition to computer applications, computer hardware and computer software. Outlining a total of seven options (the seventh being that computer studies remain as it is which was presented as 'not an option') the TUI also suggested the possibility of computer studies as an optional component within one of a trio of revised Leaving Certificate subjects: Applied Mathematics, Physics and Chemistry, and Mathematics.

Not Just a Subject? Mid to late 1980's

The mid to late 1980's saw a broader consideration of the potential of technology incorporating a progression from the rather narrow emphasis on computer science or computer studies to the use across subjects and to the potential catalytic effects. It also

marked a wider participation in the associated discourse and debate than had been the case during the previous decade when interest and influence in the Irish context was confined almost exclusively to members of the CESI. At this time interest at EU level manifest itself in a number of pilot projects incorporating technology training and school based projects in microelectronics and data processing (Collery, 1987; Harrison, 1987). At national level the Department of Education sanctioned a pilot Junior Cycle course in Technology incorporating Information Technology. At this time Mackey (1984a) outlined how technology might facilitate a shift in the dominant model of teaching and learning, although he also recognised the constraints imposed by the current system of education:

The proper use of such technologies can give us a pupil-centered system where the emphasis is on learning skills, less on the retention of knowledge, and more on the acquisition and retention of knowledge. I fear, however, that we may well lose out on these benefits if we fail to understand the implications, and instead opt for the narrow path of simply teaching young people about computers with the objective of making them 'computer literate' in the narrow, technological sense (Mackey, 1984a, p.5).

Mackey recognised the tendency to think within the narrow confines of the curricular and examinations based system but urged reconsideration of this approach. Introducing the concept of a modularisation he outlined a possible three-tiered approach incorporating courses for all students in Junior Cycle, a computer studies course at Senior Cycle consisting of modules in existing subject areas, and a stand-alone computer science subject at Senior Cycle level. He argued that a subject only approach would ignore the relevance of computing to practically every subject on the curriculum and limit the wider implications of technology as a potential catalyst for system level change seeing that 'the educational needs of an Information Society cannot be met by an instructional delivery system developed for use in an earlier age' (Mackey, 1984a, p.7). Dunne and Morgan (1987) supported this view drawing attention to the potential of technology to alter the fundamentals of current educational provision:

The curriculum issues raised by modern technology extend to almost all the defining characteristics of current education including the form and shape of schools themselves, the notions of teaching and learning, the debate about content learning and process learning, the meaning of words like knowledge and intelligence, the process of teacher education, life-long learning, education for leisure, education for change, local control of education, and the role of government of supplier and monitor of education (Dunne & Morgan, 1987, p.9).

The potential of technology to provide access to vast quantities of information 'the age of information' and for new forms of evaluation to reflect the outcomes provided for by

technology were also raised by Dunne and Morgan (1987, p.11). Many commentators were now drawing attention to this affordance and the 1980's saw the introduction of related terms such as 'information society' and 'information literacy' to the discourse and literature. Similar to Mackey (1984a), Turner (1984) drew attention to the potential of this 'new easy access' to act as a catalyst for the reorganisation of education stating that: 'the learner's new easy access to and ready manipulation of vast quantities of information across an extended range of reality will obliterate present subject boundaries and prescribed syllabi' (Turner, 1984, p.256). Mackey (1984b) in recognising the need for systemic change to support such developments emphasised education over schooling, learning over teaching, and consideration of non-traditional modes of assessment so as to adequately and fairly access the potential outcomes achieved as a consequence of technology based learning experiences.

Brady (1987) saw the general trend of teacher involvement at this time as moving away from technical and scientific teachers only to a more general cross-section of the teaching community. However he saw the emphasis on programming at in-service courses and the lack of standardised hardware/hardware maintenance and software as hampering efforts. Clifford (1987) in summarising the situation at the time drew attention to the fact that some students within the system had by now encountered computers as part of their formal education courtesy of the *Computer Studies* option and the European and Junior Cycle Technology initiatives. He saw the fact that schools now had lower student to computer ratios and that teachers had attended courses dealing with computer studies or the use of computers in teaching, coupled with increased access to home computers as heightening the need 'to further develop an appropriate series of syllabi' (Clifford, 1987, p.58) although he did not elaborate on whether this should relate to subject or computer syllabi, or both. Dunne and Morgan (1987, p.11) also considered the nature of future use and proposed three possible models: as a tool to support the existing curriculum and its related organisational structure based around discrete subjects, secondly as a tool to support cross-curricular problem solving without subject boundaries, and thirdly as a tool to allow learners represent information in new ways. Dunne and Morgan went on to cite examples of enabling applications such as LOGO, as well as word processing, database and spreadsheet type applications which they identified as 'content-free' and hence subject-independent.

These considerations of alternatives to traditional subjects provide an insight into how the microcomputer and associated technologies was inspiring some educationalist to consider alternative forms of curricular organisation to the traditional subject based approach, and sparing this, the potential for cross-curricular integration. However Dunne and Morgan (1987, p.10) offered the strongest rationale for the inclusion or integration of technology in the existing subject-based approach, reflecting the more aspirational and less developed nature of the non-subject based alternatives presented:

It [technology] is used to enhance and improve the ways in which existing curricular structures are presented and taught. It often has the potential to improve learning because it can present ideas and concepts to children in a more individualised and digestible form. It helps policy-makers and governments in that examples of what are deemed good practice can be made widely available, often with a sort of state imprimatur, and this helps with the development of centrally controlled core curriculum and uniformity.

Clifford's commentary (1987, p.59) drew particular attention to the non-systemic 'patchy' nature of advances to date but identified a number of curricular areas where use was possible including history, geography, art, engineering, mathematics, music and science. However the nature of the use proposed by Clifford in many of these areas may be described as vocational in orientation, for example, Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM) in engineering.

The CEB (1987) document *Science, Technology and the Post-Primary Curriculum* marked a change in emphasis, in line with thinking at the time, from a focus on computer science and/or computer studies to an emphasis on use across the curriculum:

It is important that students become familiar with new information technologies throughout their school careers from primary level to Senior Cycle and have direct experience of computers as aids to learning and as tools. Information technology should be developed on a cross curricular basis and be manifest in every subject....Guidelines on the incorporation of information technology in particular curricular areas or in specific subjects should be provided by the Board through specialist working groups or by appropriate course committees. An adequate computer: student ratio should be established in all schools to facilitate student experience (CEB, 1987, p.17).

Although the emphasis was now on cross-curricular use and on the desire to provide all students with the opportunity to develop 'computer literacy' consideration was also being given to a more specialised computer science course at Senior Cycle:

The development of a separate course in Computer Science at Senior Cycle should be considered for the purposes of national certification. This should have full status on a par with other recognised subjects, and should be offered to students wishing to study this topic

in more depth, with a view to further education or vocational aspirations. Specific aims and objectives should be drawn up by course committees. A clear distinction should be drawn between the need to provide all students with confidence and competence in using computers and the more specialised demands of a computer science course (CEB, 1987, p.41).

This document also showed an awareness of the possible impact on resources, both human and technological, of this potential dual approach. However the prioritisation of computers across the curriculum and literacy for all was clearly outlined:

It should be noted that the two approaches - computer literacy/familiarity for all and Computer Science as a specialist area - while not being contradictory in theory may be incompatible in practice, mainly due to the lack of resources. Thus, for example, a school offering a course in Computer Science would require a specialist room with a concentration of equipment and fully qualified specialist teachers. The effect of this could easily be to compartmentalise the computer equipment in the school (as few schools could afford an adequately equipped computer specialist area and general computer facilities for all departments), and also to foster a tendency among teaching staff to see computers as solely the domain of one teacher. In cases of such conflict of interest, preference should be given to a policy of computers across the curriculum and to a programme of computer literacy for all (CEB, 1987, p.41/42).

The CESI produced a response to this document in May 1987 in which it drew attention to the CEB's stated rationale for science and technology in education (aiding personal development and promoting economic growth) and noted what it viewed as an unwarranted emphasis on the economic dimension 'from a body which we perceive as being concerned, first and foremost, with the formal education of our children' (CESI, 1987, p.26). This document went on to outline a spectrum of possible roles for technology in schools as an extension of the CEB's distinction between information technology as a subject in the curriculum and information technology across the curriculum. These were: information technology as an independent subject, aspects or modules of information technology in other subjects, the use of IT as a medium for teaching and learning in all subjects, and information technology as a normal part of the school environment, used in administration and management. This document expressed a particular interest in the latter two roles and the emphasis on administration at the time was reflected in a number of articles by Oldham detailing how the computer could help with this aspect of school work (Oldham, 1990a; Oldham, 1990b).

The CESI response to the CEB discussion paper went on to draw particular attention to the potential of the word processor as a cross-curricular teaching and learning tool due to its overlapping affordances in respect of teaching, learning and administration:

We have devoted considerable space to this aspect because we feel that the area is one in which there could well be 'takeoff': that is, with a small level of support, a very large number of teachers and school administrators would use the facilities and thus help to provide a suitable environment for the students in our schools (CESI, 1987, p.26).

The emphasis on word processing and the hope that it might act as a catalyst for further developments in respect of technology in education was evident in Oldham (1988, p.6) who in categorising certain applications as 'tools in education' described word processing as the 'surprise success story from primary level up to university and beyond.' McGarr (2009) refers to this as 'the keyboarding stage' in the history of technology in Irish education and its impact was such that the NCCA drew up a curriculum for typewriting/word processing which was to be added to the Junior Cycle as a full subject in Autumn 1991. In tandem a short twenty hour course for those who did not wish to take the full three year course was also scheduled with successful students receiving a special certificate from the Department of Education. Two years previously in 1989, the NCCA developed a new Technology course which included materials technology and computing skills. This was examined for the first time in 1992.

As consideration of the role of technology increased the issue of continuity and progression from primary to post-primary education was raised for the first time in the CESI response to the CEB discussion document. A CESI sub-group for primary education was set up in 1984 and developments at primary level centered on the *Pilot Scheme for Computers in Primary Schools* - a pilot project which took place in school years 84/85 and 85/86 and which involved twenty-six schools regionally distributed. A series of publications emanated from the Department of Education at this time detailed computer use at primary level by means of word processing, LOGO, databases and use with special needs students (Department of Education, 1987). The need for development of appropriate software was a key issue arising from the pilot study and the CESI had hoped that the report relating to the Pilot Scheme would indicate likely directions for information technology at primary level as well as starting points for work in the Junior Cycle of post-primary school.

The CESI supported the provision of a broadly based stand alone subject (computer studies or information technology) in the Junior Cycle but found the CEB discussion paper to be somewhat lacking in this regard: ‘it does not refer explicitly to the inclusion, or exclusion, of a substantial but broadly based introductory course for younger second-level students’ (CESI, 1987, p.8). The CESI’s own position was developed as follows:

The Branch supports the provision of an independent subject, Information Technology, along the lines of the recently developed Computer Studies option for the Junior Cycle. The scope and content of that option might provide a model or starting point for the discussions of a course committee. The course should again be somewhat flexible, so as to cater for students with different needs (and indeed for schools with different facilities, and teachers with different areas of expertise). Some members feel that the time has come when the Junior Cycle course should be formally examined (CESI, 1987, p.9).

In relation to the Senior Cycle, the CESI expressed support for a ‘separate and specialised course’ (p.8) most appropriately called ‘Computer Science’, and formally certified at national level. A flexible modular structure was recommended, as flexibility was seen as vital to launching such a course given the non-standardisation of equipment in schools and the diversity of teacher expertise:

The assessment should be so devised that a student need cover only a certain number of modules in order to satisfy the course requirements. In that case, teachers can select work relevant to their students, suitable for the equipment in their schools, and within their own areas of expertise; that is they will be able to respond flexibly (CESI, 1987, p.8).

At this time one of the emerging considerations was in relation to the facilitation of communication by means of email. One of the main catalysts for this was the setting up of the National Information Technology in Education Centre (NITEC) in 1986 under the auspices of the Department of Education. Pilot projects involving the use of an application called Fredmail and bulletin boards also took place allowing schools to connect with one another and up to two hundred schools took part in international projects involving email at this time. Describing the experience in one second level school, MacHale (1990) outlined how communication tool place with other schools, institutions and individuals in Ireland as well as in the US, France, Germany, Britain, Denmark and Israel:

Messages were exchanged with contacts in the US in a matter of hours, going back and forth from one classroom to another. Not only were those, but nearly all of the Leaving Cert. students were able to apply directly through the school computer to the CAO (Central Applications Office). This was not only quicker and more efficient, but it was also cheaper than filling in the standard applications form (MacHale, 1990, p.17).

Related to this there was some consideration of the curricular relevance of email and MacHale (1990) suggested some pedagogical reasons for its use. However the costs involved were prohibitive as was the cumbersome nature of email applications, which involved the use of logon file scripts and a relatively steep learning curve.

Although the 1980's marked an increased interest in curriculum reform related to computer based education at both Senior and Junior Cycles there was little by way of real progress in relation to the key decisions and priorities and as such educational computing remained essentially a 'minority interest' amongst the teaching profession (Sterne, 1990, p.23). Indeed in Sterne's view the late 1980's marked a downturn in the profile of technology in schools, compared to the early 80's when a special Policy Committee was established in an attempt to stimulate growth of the educational software development industry in Ireland. Sterne attributed this perceived downturn to changing fashion and to the public's prioritisation of other issues:

Popular culture has now moved on. Green concerns like global warming and the destruction of the rainforests can attract public attention more easily than the implications of information technology. Computing is perceived as somewhat passé - an eighties issue whose time has been and done (Sterne, 1990, p.23).

Sterne (1990) also drew attention to political factors leading to cutbacks in public service spending causing schools to scale down their fringe activities and concentrate on examination subjects and results. Interest amongst teachers also fell with Sterne citing a lack of activity on the part of CESI outside of Dublin in recent years. A study of CESI members cited by Sterne indicated very little interest in subject-specific software packages with many teachers still believing that students should be taught to programme computers as a timetabled subject.

The Gathering Momentum: 1990's

As the 1990's set in further discussion documents were produced by the Association of Secondary Teachers of Ireland (ASTI) (Breathnach, 1990) and by the CESI (1991). The ASTI document raised a number of difficulties with existing provision including the lack and non-standardisation of hardware and the shortage of software. The link with mathematics, the perception of computers as elitist and difficult, time restrictions and the lack of certification were cited as drawbacks in respects of the existing *Computer Studies*

provision. The general level of teacher familiarity was seen as hindering the use of computers across the curriculum. The ASTI computer studies sub-committee proposed a fully certified and accredited Leaving Certificate subject in its own right, with the content to include knowledge of operating systems, programming, familiarity with applications packages including word processing, databases and spreadsheets, hardware development and computer architecture. As the proposed subject was more concerned with the use of computers than with the technical understanding of them, it was suggested that a title such as 'Computer Science' might be misleading, with the preferred title being 'Information Technology' (Breathnach, 1990, p.30).

The CESI (1991) proposal reiterated the need for a broadly based introductory course at Junior Cycle. In what may be viewed as a progression in thinking from its previous document in 1987, a modular structure was now being recommended as the most feasible way of coping with the varying human and hardware resources in schools whilst also allowing for formal assessment. The existing Junior Cycle *Computer Studies* syllabus was suggested as a 'suitable model for development':

The assessment should be devised so that a student need cover only a certain number of modules in order to satisfy the course requirements. In this way, teachers can select work relevant to their students, suitable for the equipment in their school, and within their current areas of expertise. It should be noted that the Junior Cycle Computer Studies syllabus provided by the Department is sympathetic with this approach and provides a suitable model for development (CESI, 1991, p.2).

In a further development in the computer science versus computer studies debate, the CESI was now recommending the provision of two full examination subjects at Senior Cycle level drawing the following distinctions:

The Computer Science course would be a rigorous one emphasising the theoretical aspects of computing as well as computer communications and the management of a computer system. This would be taken by students with the special aptitude required and would cater for a relatively modest number of students. The Computer Applications course would provide an opportunity for other students to take modules of the Junior Cycle course which they had not previously covered and study them in more demanding environments. This would enhance the information technology skills of students which could then be exploited in other areas of the curriculum and, later on, in studies in third level or in the world or work (CESI, 1991, p.2).

However, the resource implications of this proposed twin provision, in addition to the Junior Cycle course were not explored in this discussion document.

The CEB policy on use across the curriculum led to a number of curricula being revised at the beginning of the 1990's so as to incorporate elements of technology. Close examination of the revised subjects indicates that the rationale for inclusion tended to be on vocational rather than on educational grounds, with the emphasis on the inclusion of software and applications which were relevant to the subject itself, rather than on the use of technology to enable teaching or learning of the subject per se. Examples include spreadsheets and databases in Business Studies, CAD in Technical Graphics and CAM in Technology/Engineering.

In 1992 the European Commission contracted Marino Institute of Education to undertake the production of a report on *New Information Technologies in the Irish Education System*. This was the first attempt to draw together the available data in relation to levels of resources and use in Irish schools, although the report acknowledged the difficulty in providing an accurate account of the levels and types of activity taking place, due to the nature of initiatives to date:

The lack of uniformity of IT programmes and IT equipment make it difficult to provide an accurate account of the level and type of activity taking place. As only limited quantities of hardware and software have been provided by a central authority, there are no comprehensive records of equipment distribution. The syllabi...contain IT modules but in most cases the modules provide a range of topics from which teachers can choose. This means that, while it is possible to state the number of pupils following any particular syllabus, it is very difficult to provide quantitative information on which IT topics are being taught and to what extent they are being taught (McKenna, 1992, p.45).

This report estimated that the average number of computers per second-level school was sixteen, with numbers steadily increasing. It documented a wide diversity of computer types in schools, many of which were old and obsolete and noted the prevalence of the teaching of computers in mainly applications based computer studies type subjects. The dominant organisational culture within schools was cited as having a distinct effect on the nature of emerging computer use:

The norm for second-level schools is to have a dedicated computer laboratory which is timetabled for specific groups at specific times. This is for organisational and security reasons but does not help to promote the integration and acceptance of computers as an ordinary aspect of school work. Computer use in second-level schools is typified by whole class teaching, with the available computers being shared between groups of students (McKenna, 1992, p.56).

'Integrated packages' containing applications such as word processors, spreadsheets, and databases were reported as being popular in the context of these subjects along with desktop publishing. Across the curriculum CAD was used extensively in technology subjects although no other significant cross-curricular uses were reported. Despite the initial emphasis on programming it was reported to be a minority activity within schools, although data concerning the minority of schools (about 25%) that participated in the Leaving Certificate *Computer Studies* module indicated that 96% of these schools were teaching programming. This is reflective of the emphasis on programming within the *Computer Studies* syllabus, although applications such as word processing, databases and spreadsheets were also commonly taught. A shortage of funding, lack of standardisation, and the shortage of suitable software were identified as constraints to the adoption of technology more generally. The lack of an explicitly stated policy and the initial emphasis on programming were also identified as constraints, with the lack of an articulated policy hampering schools development in this area:

One major constraint has been the lack of an explicitly stated strategy for developing IT activities in schools. It is clear from the number of activities that have been initiated and supported by the Inspectorate that the Department of Education implicitly favours the promotion of IT in schools but no definitive policy has been articulated. While the lack of an articulated policy has given freedom to individuals to experiment, schools have found it difficult to develop and sustain their own long-term IT strategies in the absence of an overall guiding plan (McKenna, 1992, p.40/41).

The need to refine and define curricula and to provide professional development for teachers, were identified as necessary factors to support the development of IT in schools. The provision of financial support and technical back-up were also identified as necessary to facilitate further enhanced use.

Further studies in the mid 1990's illustrated how in the absence of policy, computer use had evolved to become largely confined to computer classes. Drury (1995) found that schools had an average of 22 computers which were mainly located in computer rooms, and that 33% of all usage was for computer studies classes. Significant use was also reported in Junior Certificate Technology and Business Studies where ICT was a mandatory element. These findings concurred with those of McKenna (1992) as regards the limited application of computer-aided learning across the curriculum. In similar vein case studies focusing on the use of ICT by resource rich schools in Dublin (Mulkeen, 1997) reported that all eight

schools in the sample taught computers courses. Mulkeen concluded that this was the dominant type of use within these schools, and that overall IT was a minority activity, often driven by and limited to one enthusiastic teacher.

The EU commissioned study undertaken by McKenna (1992) provided an indication of renewed interest in technology in education, and of the desire to address the current unsatisfactory situation in the Irish context. The Green Paper (Department of Education, 1992) alluded to future steps by stating that:

Throughout the second level programme, at both Junior and Senior Cycles, there should be a major initiative to increase awareness of both technology and enterprise among all young people, including those who have no intention of pursuing either area in depth. This would include computer literacy (Department of Education, 1992, p.13).

Seeing the promise of a 'major initiative' as an opportunity to influence future policy the CESI produced a relatively detailed response to the Green Paper based on an open forum at its annual conference in November 1993 and subsequently published in *Primary Computing* (1993). The recommendations included in this response addressed the by now standard issues with regard to place, form and content of computer-based education at post-primary and in what may be seen as evidence of a shift in thinking to a more systemic level, also proposed an infrastructure to facilitate the adoption of technology by educational institutions at all levels within the State. These wide ranging recommendations included the provision of guidelines for use at all levels, the identification of desirable practice by means of national/international research and co-operation, and the facilitation of equal educational opportunities with respect to gender, social disadvantage and special needs by means of technology. In terms of infrastructure the recommendations proposed an enhanced role for NITEC, the appointment of specialist advisors and IT specialist teachers and the establishment of IT Centres using the existing Teachers' Centre Network. The recommendations with regard to post-primary level emphasised provision of basic computer literacy by the end of Junior Cycle and the integration of IT across subjects within both Junior and Senior Cycles. However the recommendations were ambiguous with regard to a specialist subject at Senior Cycle, indicating some reconsideration of the previously stated position with regard to 'twin' subjects at Leaving Certificate level, recommendation 28 of 38 detailing the aspiration that 'Senior Cycle pupils would have an opportunity to enhance their expertise in IT across a range of applications leading to

certification' and that 'those interested and sufficiently competent could undertake theoretical studies leading to computer science certification' (CESI, 1993a, p.27).

The publication of two NCCA documents in 1993 and in particular the NCCA Discussion Paper *Education and the New Technologies of Information and Communication Issues and Options in Ireland* (NCCA, 1993a) provide further evidence of increased interest in educational applications of technology during the 1990's. The initial NCCA document *A Programme for Reform Curriculum and Assessment Policy Towards the New Century* identified competence and understanding in practical skills, including computer literacy, as one of seven pupil entitlements on completion of the Junior Certificate however the roles of 'Computer Studies' and 'Keyboarding' were listed as 'to be determined' (NCCA, 1993b, p.35) pending the subsequently published discussion paper. The *Discussion Paper* raised a number of possibilities and considerations in respect of technology at post-primary level illustrating the complexity of decision making in this area. The alternatives raised at Junior Cycle centered on questions around what constitutes basic competencies in IT, whether all students should be afforded the opportunity to acquire the yet to be defined competencies at Junior Cycle, and if so whether this could or should be achieved as part of a formal course, on a modular basis within existing subjects, or through a standalone subject. At Senior Cycle the issues raised centered on whether or not some form of course/subject should be offered at this level and if so what it might contain with the possibilities raised reflecting the computer science versus computer applications debate. The CESI suggestion of two subjects was also documented as was the possibility of distributing the content on a modular basis across existing subjects with Physics, Engineering, Mathematics and Applied Mathematics suggested as possible recipients of such modules. The consideration of appropriate forms of assessment and certification were raised in respect of both levels.

The CESI convened an open forum in December 1993 with a view towards formulating a response to this discussion document (CESI, 1993b). The NCCA representative present specifically requested guidance from the CESI in relation to what might constitute technological competence for students by the age of fifteen years. Reflecting the interest held by the Department of Education at the time, two members of the Inspectorate were also present and contributed to the forum. The CESI response was similar in emphasis to its response to the Green Paper twelve months earlier with regard to the role of IT within

Junior and Senior Cycles. As such the definition of competence at fifteen years was not formally or substantively addressed although at Junior Cycle the questions of content and form were raised with regard to literacy provision (what was being called ‘entitlement at 15+’). At Senior Cycle the possibilities regarding a subject(s) versus integration were again raised. This CESI forum provided the only major response to the *Discussion Paper*. Based on its initial content and the CESI response the NCCA presented tentative suggestions for a policy in 1994 (NCCA, 1994). The NCCA proposals involved a change in focus over the years of schooling from integration at primary level, to acquisition of basic skills at Junior Cycle, to appropriate integration in subjects at Senior Cycle coupled with an optional specialist subject. Although no further direct action ensued from the NCCA Oldham (1998) outlined how guidance on the use of technology to facilitate teaching and learning was seen as coming from non-prescriptive advice from NCCA Course Committees on good practice, or from bottom up initiatives from individual creative teachers rather than as a matter of policy.

As the 90’s progressed there was a developing sense of the necessity to address preparedness for the ‘information age’ influenced by technological advancement (the coming of the Internet), interest at EU level including an awareness of the situation in other countries, and an enhanced exploration and understanding of the concept of the ‘information society’. This was reflected in the setting up of Ireland’s Information Society Steering Committee and the publication of *Information Society Ireland Strategy for Action* (Information Society Steering Committee, 1996) which documented insufficient integration of ICTs into curricula and curriculum programmes. The White Paper *Charting Our Education Future* (Department of Education, 1995) was also an influential publication at this time. Without directly referring to the role of technologies in education it included a number of statements which imply a role, albeit from an economic perspective:

Economic activity is increasingly dependent on the knowledge and skills of people and their capacity to learn continually throughout their lives. Thus investment in education is a crucial concern of the State to enhance Ireland’s capacity to compete effectively in a rapidly changing international environment (Department of Education, 1995, p.5).

Scientific and technological developments have an enormous influence on our society whether through their economic and social effects or through their impact on individual lifestyle. In a fast changing world, it is important that people are able to understand such innovations and to evaluate their implications (Department of Education, 1995, p.48).

It is likely that the White Paper provided a certain amount of impetus for exploration of the role of technology by the Inspectorate within the Department of Education and documentation relating to this time illustrates how thinking was influenced by a number of key studies/reports in addition to the White Paper:

The Forbairt report *Ireland: the digital age, the Internet* (Forbairt, 1994) drew attention to the role of technology in respect of the essential mission of schools: to facilitate learning. It pointed out that technology must be set within the overall context of students learning and identified the need for change in teacher attitudes and school cultures if it was to have an impact on curriculum delivery in schools. This report highlighted the need for a centrally-directed strategy for IT in education and stated that without such a strategy the country was in danger of being left behind. It suggested that the current vision for technology in education at the time was too restricted, too narrow in scope and inadequately funded.

The *IT Integration Project* (ITIP) was funded by the Department of Education (1996a) with a view towards identifying and developing technology to support teaching and learning across the curriculum. This project was mainly survey based, collecting data on resources and use as well as the views of teachers and principals in relation to 'areas of need' for the promotion of IT within schools. Three categories of teachers were surveyed (those who promote and facilitate ICT activities, teachers with particular responsibility for ICT and Business Studies teachers) in addition to school principals. Although the rationale for the selection of these teacher groups, and more particularly the distinctions between them, is somewhat unclear the findings did add weight to the need for a co-ordinated national policy. In this study teachers who promote and facilitate ICT activities in the school identified the incorporation of an ICT specification in curricular frameworks as the greatest need (77%), followed by provision of training (67%), provision of time (67%) and development of a national strategy (64%). Teachers with particular responsibility for ICT identified support for IT as an examination subject as most important (30%) although almost as many (29%) rated cross-curricular use as the most appropriate role for ICT. Business Studies teachers surveyed perceived cross-curricular approaches as the most appropriate strategy but identified insufficient time to develop use (80%), lack of a specified syllabus (74%), insufficient training (70%) and lack of a Department of Education ICT policy (69%) as major obstacles to use. The study showed a high level of consistency

in the rankings of areas of need by teachers who facilitate ICT activities and by Business Studies teachers. Principals identified lack of time to develop use (88%), insufficient training of staff (78%) and insufficient technical support (78%) as the most significant obstacles.

The OECD (1994) *Review of the MINERVA Project* focused on an initiative which aimed to foster the use of computing in Portuguese schools over a seven year period. Minerva was a university-school-government partnership with each participant university selecting schools from its area to support by way of professional development and specialist expertise. Funding was provided by the government. The evaluation team concluded that the non-hierarchical distributed leadership structure was effective and worthy of note by other nations wishing to achieve technology implementation in schools. The reform was adjudged to have been successful because it was presented and perceived as an educational initiative rather than as a computer initiative. The project assigned a high priority to effective in-service provision and a key insight highlighted by the evaluation was the need to enable teachers to understand the relevance of the practical skills being developed to day to day curriculum activities in the school.

The *Intermediate Report of the EU Task Force on Multimedia in Education* (European Commission, 1995) documented the continued growth of multimedia in the home stimulated by a fall in hardware costs and telecommunications charges as well as the extent of information available online. It also identified primary and post-primary schools as potential major users of multimedia subject to the elimination of many obstacles including poor levels of equipment, inadequate quantity and quality of software and deficiencies in teacher training.

Department of Education Submission to the Information Society Steering Committee: 1996

As outlined above the mid 1990's saw increased awareness and debate in relation to an appropriate model for ICT use within schools. The initiation of the Information Society Steering Committee was also significant at this time as it acted as a catalyst for the Department of Education *Submission to the Information Society Steering Committee* (Department of Education, 1996b). The newly established Information Society Steering

Committee asked each Government Department to outline how it intended to address the emerging 'information society' and the Department of Education submission was particularly significant in respect of future policy developments in this area.

The Department of Education *Submission to the Information Society Steering Committee* argued for an overall strategy for the use of IT in education but recommended that the imposition of a 'grand plan' developed at national level would be inappropriate. Instead it recommended the initiation of pilot projects at local level with provision for national dissemination of outcomes relating to successful curricular integration and pedagogy. The submission document recognised the complexity of integrating IT into education highlighting the need to avoid a technology driven approach. It emphasised instead the development of sound pedagogy so as to overcome any potential teacher resistance to the associated change. Related to this, this document recognised that the provision of a technological infrastructure alone would not facilitate use and documented ten factors impacting on use across the curriculum (teachers' attitudes/computer skills/pedagogical skills, support of the principal/the computer coordinator, appropriate hardware/software, curriculum materials, Department of Education IT policy, and external support). The document warned against the expectation of 'quick fix' solutions, stating that the level of technical and pedagogical expertise which a school would need to successfully use IT could only be developed over a period of years. The importance of formally incorporating IT into national curricula was emphasised in the context of the findings of the ITIP study (Department of Education, 1996a) which identified the fact that IT was not incorporated into national curricula as one of the three most significant barriers to use. Citing the findings from this study which found that the greatest use of IT was in subjects where its use was mandatory, the submission document concluded that the NCCA had a key role to play in promoting usage by incorporating relevant elements as part of the ongoing process of curriculum development and review. The potential of technology to promote the development of new ways of learning was also recognised.

Reflective of the social, vocational, economic and pedagogical rationales presented as underpinning the use of IT within the education system, three overall objectives underlying the draft proposal were presented as follows (Department of Education, 1996b, p.11): (i) to ensure that Irish schools and educational institutions are positioned and capable of

exploiting, in the most cost effective ways possible, the contribution which IT can make to enhancing educational outcomes; (ii) to ensure that Irish school leavers and graduates are fully equipped to meet the challenges of the Information Society, and through this, to make the maximum contribution to their own personal fulfillment and to economic and social development; and (iii) to ensure that appropriate opportunities are put in place for adult and continuing education in IT, in order to support the enhancement of IT skills in the population generally and facilitate mobility and flexibility in the workforce.

The submission document went on to outline a number of possible actions so as to enable the exploitation of IT within the educational system. Although the main thrust of this submission was in relation to a decentralised approach it recommended a national body for the coordination of IT related activities so as to address perceived fragmentation within current arrangements. It was also envisaged that this body would develop a national policy for IT across the different sectors, stimulate activity in the area, provide advice and support to schools and related agencies in developing and implementing IT policies, and conduct research into the applications of IT in education. It outlined how such a body might have two distinct roles: a pedagogical role with a remit to increase the quantity and quality of classroom exposure to IT for students, teachers and schools, and an administrative role with responsibility for researching and developing best practice. These roles were in addition to the administration and co-ordination of activities in the area (including equipment provision, curriculum development and teacher training), so as to ensure that overall policy objectives were met thus providing a suitable return on monetary investment. It recommended that a first step in this process would be to establish a Steering Committee on IT in Education with wide representation from interested parties. It further recommended the appointment of a suitably qualified person on a contract basis to develop proposals and to engage in a process of consultation with the education partners including management bodies, teacher unions, parents associations, NITEC, and interest groups such as the CESI. It proposed that the Terms of Reference for the Committee should include the preparation of a set of proposals for the Minister for Education on the future activities and organisational arrangements which would support the achievement of the objectives outlined. This submission, although not a policy document, indicated Department of Education thinking at the time and was followed closely by the establishment of an ICT Steering Group by the Minister for Education in mid-January 1997.

Summary and Conclusion

This section had traced the development of ICTs with respect to education in Ireland from the early days of interest in the late 1960's/early 1970's to the formulation in January 1997 of the ICT Steering Group which eventually drafted the Schools IT2000 policy document. In the main the periods of development can be defined in terms of their emphasis on learning about technology as distinct from learning with technology, (or both), and by the origin of the initiatives, from those pioneered by enthusiastic teachers or lobby groups to those initiated by the Department of Education and its related agencies.

In the early days of activity in Ireland there were inputs from the Department of Education by means of initiating summer training courses which acted as a catalyst for the setting up of the CESI. During the 1970's the CESI took the lead in advocating a role for a computer science or computer studies type subject within the confines of the curriculum and in the early 1980's the Department of Education initiated a *Computer Studies* module within the Mathematics curriculum at Senior Cycle. As the 1980's progressed there was a broader consideration of the potential role for technology within schools accompanied by a wider participation in the associated debate and discourse including a role for the newly established CEB. This encompassed consideration of use across subjects as well as consideration of the desire to facilitate the development of 'computer literacy' for all participants in formal education. Many considerations of the form, place and content of computer based educational endeavors have been reflected in the writing of numerous documents and policy proposals, although the general lack of clarity regarding the purpose of education in the Irish context has been very much reflected in the case of ICT. The external and economic influences prevalent in the broad context of educational policy making in Ireland were also evident in respect of ICT developments especially at the time of increased interest in the mid 1990's reflecting an emerging neo-liberal agenda related to the 'information society.'

Buettner (1997) outlines how the use of computers in education in several countries has followed a distinct pattern moving from a focus on programming to a focus on basic applications, to curriculum integration. Although use within Ireland has been reflective of the key stages identified McGarr (2009) argues that rather than being guided by policy, computer use in Irish education has instead evolved within a policy vacuum and that the

chronology of related developments over the past three decades has served only to ‘nudge’ technology use in the general directions outlined. Although much time and energy has been invested by interested parties, an overarching sense of dissatisfaction with provision has continued to exist. Added to that has been a slow rate of progress as reflected by the recurrence of many of the consideration to do with place, form and content accompanied by a failure, especially in terms of cross-curricular use, to address the need for accompanying curriculum reform. The predominant use of technology in schools has been within discrete stand alone computer studies type subjects. This use has, in the absence of policy, developed within schools where it is compatible with existing subject boundaries and organisational structures. Many of the developments outlined such as the optional modules within Mathematics at Junior and Senior Cycles have had little or no impact on mainstream education being perceived as short-term initiatives with no relevance to the State examinations, which are a key determinant of what is prioritised within Irish schools. Whilst the complexity of reform has been acknowledged this has not always been manifest at the implementation stage with the promotion of technology based education often seen as a technical rather than as a curricular innovation. In addition, potential initiatives have suffered due to the rapid development of the technology itself which has rendered policy makers and potential policy makers cautious, resulting in a general state of inertia as regards policy related decision making.

Chapter 4 Methodology

Introduction

This study sets out to analyse the development, implementation and outcomes in relation to policy making for technology for schools in the Irish post-primary context with particular reference to the origins and enactment of the 1997 *Schools IT2000: A Policy Framework for the New Millenium* (DES, 1997a). The data for this study is a set of nineteen interviews with policy makers/actors and those close to the technology in education agenda thus positioned to influence policy and policy making. As outlined in Chapter 3 this study is set against a backdrop of relatively low levels of interest and activity in this particular area of educational provision and aims to understand the particular processes, influences and implications which relate to Schools IT2000. The foci for the study which relates to a particular time period in the history of Irish education (1997–2003) are articulated in the following research questions:

Research Questions

- What approach was taken to the development of DES policy in relation to ICTs in post-primary education (specifically Schools IT2000 (DES, 1997a))?
- What factors have influenced DES policy in relation to ICTs in post-primary education?
- How has post-primary ICT policy been implemented to date? What have been the resultant outcomes?
- What are the related policy implications of findings for future DES post-primary ICT policy?

Logic of the Inquiry

The logic and rationale for this study are grounded in the researchers' engagement as a teacher, teacher educator and researcher in the area of technology and education at mainly post-primary level in Ireland. Prior to the commencement of this study the researcher had completed an M.A. in Education which had focused on issues relating to the implementation of technology at the school level as well as being a member of research teams which completed studies addressing issues relating to technology and education at the national level. These studies included the OECD/CERI case studies of ICT and school

improvement undertaken by Gleeson et al. (2001) and the NCCA commissioned report into a possible computer-based subject at Leaving Certificate level completed by O'Doherty et al. (2001). As a consequence the researcher developed a degree of knowledge and insight into the issues and actors which occupied the landscape of policy making in this area whilst not being considered an 'insider' for the purposes of this work. Arising from his participation in these studies the researcher saw a gap for a qualitative analysis of national policy in relation to ICTs in Irish school focusing on the process of policy development and the associated influences as well as the implementation dimension. The studies by Gleeson et al. (2001) and O'Doherty et al. (2001) both reflected the often taken for granted complexity of the application of technology to education and it was hoped that the current study would provide a contribution to established knowledge by virtue of its qualitative/interpretative approach with an emphasis on understanding the antecedents and underpinnings to policy provision in this area. It was intended that this qualitative study would sit alongside and illuminate research in this area which has taken a mainly quantitative approach to the analysis of policy outcomes e.g. the 'official' evaluation of Schools IT2000 (NPADC, 2001). The researcher's background and hence greater familiarity with the post-primary context, as well as the desire to narrow the research focus somewhat, influenced the decision to set the parameters of this work within the post-primary sector.

Thus the researchers' prior activities fed into the identification of a research focus and associated approach. Steier (1991, p.3) notes it is imperative that as researchers we understand and become aware of our own research activities as 'telling ourselves a story about ourselves.' This is significant as a means of understanding the researchers' relationship with the researched in the context of this study. Here the 'story about ourselves' may be understood as a desire on the part of the researcher to cultivate and develop a much greater sense of understanding of a landscape in which, at the outset to this study, he was only familiar with the issues and actors. This familiarity, and with the relevant literature and historical context, can be understood as framing the interpretations presented by the researcher over the course of this thesis.

The Research Approach

The study is not an empirical attempt to describe and evaluate the process and outcomes akin to a policy science approach but is more closely situated in what Grace (1984) describes as 'policy scholarship' which as elaborated on by Troyna (1994) gives centre stage to social scientific interpretations of the antecedents, production and orientation of education policy. Whilst there has been acknowledgement of a broadening of perspectives in relation to policy research characterised by a variety of theoretical perspectives and methodological designs this too is subject to some debate amongst those within the field of inquiry, some who prefer to place their studies in the self-proclaimed genre of 'education policy sociology' (Ball, 1990) rather than that of 'policy scholarship.' Ozga (1987, p.14) sees this genre of research as 'rooted in the social science tradition, historically informed and drawing on qualitative and illuminative techniques.' Like 'policy scholarship', 'education policy sociology' indicates a more theoretically sophisticated and historically informed approach to policy studies than the apparent value free and objective approach to policy studies which dominated this field previously. This is operationalised in this study by means of the methodological approach adopted and the centrality of the interpretative perspective to data analysis where the researchers' task is to interpret the perspectives and understandings detailed by interviewees.

The relationship between research and policy has been addressed by Oreszczyn and Carr (2008) in the context of policy decisions by the UK government in relation to genetically modified crops. They contest that traditionally evidence based research is utilised as part of the policy making process by attempting to improve decision making by drawing on what has been proven to be effective in the past. This perspective views the link between research and policy as linear and rational. Young et al. (2002) draw attention to the paradox between this notion of how the policy process should work and its actual messy, uncertain and unstable reality. This paradox is rooted in the ideal or traditional view of the policy process whereby policy research is seen as objective and conclusive and used to assist with making decisions and choices. This also resonates with the 'rationality project' approach to policy as de-constructed by Stone (2002). The 'rationality project' approach sees policy making as a 'production model, where policy is created in a fairly orderly sequence of stages' (p.10) allowing problems and goals to be clearly specified in political debate, and administrators and experts to work out the technical details of implementing solutions. The

alternative view is policy making as a struggle over ideas, classifications, labels, and boundaries. The process is not necessarily orderly, but requires the development of shared meanings to allow collective action: problems, goals and solutions are changeable and contextual. In the rational approach, there is an implicit assumption that a solution will eventually 'fix' the stated problem, thus achieving the defined goal. In the alternative conceptualisation advocated by Stone (2002) solutions are seen as 'ongoing strategies for structuring relationships and coordinating behavior to achieve collective purposes' (p.261). Stone's main argument revolves around the inappropriateness of rational analysis and the limitations of positivistic approaches taken in academic political science and policy research. Instead Stone advocates aspiring towards a more complex understanding of policy processes using social constructivism and interpretivism as guiding paradigms.

Oreszczyn and Carr (2008) also advance the view that policy formulation is better informed by a move away from the traditional linear approach towards more participatory and inclusive models. These latter models emphasise the need to look beyond formal government policy making towards the informal relationships and networks that constitute the wider policy making process. This inclusive approach may also be applied to the policy analysis and evaluation process. Lather (2006) calls for qualitative policy analysis that can engage strategically towards the improvement of educational practice. Citing Rist (2000) she contends that historically education policy analysis has been dominated by positivism with few exceptions. Drawing on Foucauldian theory she contends that there is need for a critical qualitative presence in blurring the lines between empirical research, politics and the philosophical renewal of public deliberation. Lathers' argument for a 'critical qualitative presence' (Lather, 2006, p.788) is particularly relevant in the context of this study and it is within this niche that it is situated. Arguing against a narrow scientificity (what makes a science a science) Lather quotes Flyvbjerg (2001) who argues for a move away from a narrowly defined epistemic science to one that integrates context-dependency with practical deliberation. Being simultaneously 'sociological, political and philosophical' this is a variant of science that does not divest experience of its rich ambiguity because it stays close to the complexities and contradictions of existence. Its goal is to foster understanding, reflection and action instead of a narrow translation of research into practice.

Taylor (1997) also details the significance of ‘context’ in relation to critical policy analysis which she describes as being undertaken through three interrelated avenues: context, texts and consequences. Taylor sees the context of any given education policy as always specific, particular and historically situated. Examining the context of a policy not only includes finding out how it came to be this way in this place, but also sees how the global is taken up in the national, by whom and in what/whose interests. Taylor (1997) also sees context as impacting in terms of consequences thus recognising the dynamic nature of policy implementation where policies are not simply implemented but are brought into being in specific locations with specific histories and by particular people whose actions are framed by both local and meso/macro contexts. This has implications in terms of researching the effects of policy emphasising the usefulness of case study and interview based investigations. In relation to ‘texts’ Taylor draws attention to the language of policy noting the value of critical discourse analysis in documenting multiple and competing discourses in policy texts.

In somewhat similar vein Oreszczyn and Carr (2008) emphasise the importance of research with people rather than on people and of learning by both the researcher and those involved in the research. Citing scenario approaches (which are designed to draw on various types of expertise and knowledge so as to model what might happen in the future) they contend that the future is no longer perceived as objective and knowable, rather it is constructed from a number of different perspectives offering a number of different views. This is relevant to the current study as it shares the epistemological and theoretical perspectives adopted by the researcher, as developed subsequently.

Wright (2006) notes that this is currently a contested time within qualitative research marked by an emphasis on and valuing of the positivist paradigm especially in the context of policy evaluation. Evidence of this trend can be seen in the context of this study where the ‘official’ valuation of Schools IT2000 (NPADC, 2001) was conducted by means of a check box questionnaire and the resultant report placed emphasis on quantitative inputs and outputs with no direct reference to how the technology was being utilised for teaching and learning. Wright draws heavily on the work of Denzin and Lincoln (2005) in painting the current landscape with regard to educational research which he sums up as being characterised by a proliferation of epistemologies and an emphasis on a narrow conception

of evidence-based research. Denzin and Lincoln (2005, p.1116) in their history of qualitative research concluded that the current era ('the methodologically contested present') is a period in which qualitative research is confronting a backlash associated with a fundamentalist, positivist/postpositivist conceptualisation of empirical research. Wright (2006) relates the de-legitimisation of non-positivist approaches to government sanctioning and assertion of positivism as *the* standard for educational research.

St. Pierre and Roulston (2006, p.674) refer to 'scientifically based research' or 'evidence based research' as having become the gold standard for educational research but lament that this is the case. They see this emphasis as being much to do with 'new managerialism' and its inherent values such as instrumentalism, efficiency, effectiveness, standards, outcomes, impact, quality and above all the nature of science itself. Quoting Hamersley (2001) St. Pierre and Roulston (2006) see that this instrumental view of the role of educational research may undermine effective practice because it privileges research evidence over evidence from other sources including that arising from the experience of practitioners. Whilst arguing for the place of qualitative inquiry in educational research they contend that conventional qualitative inquiry does retain some positivist features such as the idea that larger quantities of data are better than smaller quantities, the concept of data saturation and the practice of coding data into categories from which themes emerge as if data and interpreter are not already theory-laden. Furthermore they contend that 'an objectivist epistemology and a realist ontology, associated with positivism, are also evident in conventional qualitative work when researchers speak of bias and objectivity and encourage richer thicker description that might yield a true representation of authentic, real, lived experience' (St. Pierre & Roulston, 2006, p.677). However, as Farrelly (2009, p. 154) argues 'regardless of the research approach used, the knowledge produced by empirical studies is frequently regarded as superior to the knowledge produced by users and practitioners.'

In summary this study adopts a qualitative approach in line with what Grace (1984) described as 'policy scholarship' aiming to provide a 'critical qualitative presence' as argued for by Lather (2006) rather than a quantitative evaluation type analysis as per the positivist research paradigm. The critical qualitative approach recognises the significance of context and takes a theoretically sophisticated and historically informed approach to

policy analysis. This approach recognises the ‘messy’ reality of the policy process and reflective of this is orientated towards establishing an understanding of the origins, production and orientation of educational policy. This is in contrast to more rational approaches which take a means-end perspective on policy development and implementation and are focused on translation into practice where research is often conceptualised in terms of evaluation. Thus the critical qualitative approach is underpinned by a more theoretically sophisticated understanding of policy processes and offers the potential for data generation which allows for understanding the antecedents to and underpinnings of policy provision. For these reasons it was adopted in the current study, although the researcher is cognisant of a growing tendency for policy research to adopt approaches grounded in the positivist paradigm due to the preference of modern governments for such approaches in the context of the neo-liberal agenda as well as the espoused limitations of qualitative approaches.

Forms of Qualitative Enquiry

In terms of qualitative enquiry the methods, designs and the theoretical and philosophical designs that support and relate to them are abstract phenomena that change over time morphing into different practices and ways of thinking. As a consequence perhaps St. Pierre and Roulston (2006) believe that, given the diversity of the field, identifying oneself as a qualitative researcher is no longer adequate but that a signifier such as, for example, interpretative, critical, phenomenological or postmodern is also necessary. According to Denzin et al. (2006, p.778): ‘previous generations of inquirers could distinguish themselves simply as qualitative researchers; [but] we know now that the field is neither unitary or united, except in their critical and/or interpretive stances.’

As a starting point Preissle (2006) suggests that qualitative research is a loosely defined category of conceptually informed research designs or models, all of which elicit verbal, visual, tactile, olfactory and gustatory information in the form of descriptive narratives like field notes, recordings or other transcriptions from audio and videotapes, and other written records and pictures or films. It emphasises description of direct experience and meaning, specifies conceptual framing while ‘leaving open the ‘what and why’ of experience and meaning that vary by the philosophical, theoretical and disciplinary orientations that researchers bring to their studies’ (Preissle, 2006, p.687). Qualitative inquiry is a web of associated practices or related research endeavors which in some cases can be clearly

demarked into clear subcategories such as narrative inquiry or ethnography or oral histories but in other cases features of the designs just bleed into one another.

Qualitative research is a contested space from a range of perspectives: philosophical assumptions, theoretical perspectives, logistics of selecting, collecting and analysing information, how we relate ethically and otherwise to stakeholders and what constitutes research and knowledge in the first place all occupy this contested space. Lather (2006, p.789) argues for reinforcing of an applied edge to qualitative work in light of the recent emphasis on positivism:

To 'take the side of the messy,' to counter faith in a naïve and transparent social world, to work with empirical material in a way that pays attention to language and show the problems with all efforts to represent reality, to present a mix of interpretations versus seeking consensus, both finding patterns and opening up closures (Alvesson, 2002); this is 'applied work' with a critical edge that can improve the quality of practice by taking into account the complexity and the messiness of practice-in-context.

It can be argued that the current study encompassing many of the aspects identified by Lather (2006) possesses such an applied dimension. The particular philosophical assumptions and theoretical perspectives which applied to the form of qualitative enquiry adopted in this study are developed in the sections which follow in relation to the research process.

The Research Process

The following sections in relation to the research process are based on Crotty's (1998) framework which suggests that these four elements: epistemology, theoretical perspective, methodology and method form the backbone of all research processes and provide a statement of how the researcher views the world in terms of what constitutes knowledge and how that knowledge can be understood thus 'providing a context for the process and grounding its logic and criteria' (Crotty, 1998, p.3). Against the backdrop of qualitative enquiry the epistemology for this study is best explained as being critical constructivist and based on the theoretical perspective of interpretative inquiry. The methodology is a form of narrative analysis and within that the method of data collection is semi-structured interviews.

Epistemology

Creswell (2002) sees the constructivist way of knowing as based on understanding multiple participant meanings, social and historical construction and theory generation. Crotty (1998) outlines how based on the constructivist perspective there is no objective truth as might be seen to be the case from the positivist viewpoint but that truth or meaning comes into existence as a result of an individual's engagement with the world. According to Crotty (1998, p.9) 'meaning is not discovered but constructed' and goes on to outline how in this understanding of knowledge different people may construct meaning in different ways even in relation to the same phenomenon. This approach rejects the understandings and practices of the natural scientific method (positivism) and emphasises the ways in which individuals interpret and construct reality (Bryman, 2004). In relation to this study it can be argued that the perspectives offered by the interviewees are consistent with this constructivist perspective being influenced by their experiences, interactions and perspectives within the social context which frames their engagement with the policy process under review. Meaning or the version of reality presented has been constructed as a result of their engagement and interactions with one another (where applicable) and with the wider context to the effect that it has been developed and transmitted within an essentially social context. Crotty argues therefore that from the constructionist viewpoint meaning (or truth) cannot be described as 'objective' or as 'subjective' but that rather it is constructed out of engagement with the world as distinct from imposing objective or subjective meanings upon reality. Consistent with Crotty (1998) and Creswell (2002), Guba and Lincoln (1989, p.85) detail how the constructivist paradigm incorporates three overarching beliefs; ontology, epistemology and methodology, as summarised below:

Ontology [what is real?] In the constructivist paradigm this is relativist, the explicit assumption is that 'truth', knowledge, reality are social constructions, which are relevant to the conceptual understanding and sophistication at the time. Truth is subjective and open to change: it is "ungoverned by natural laws".

Epistemology [how do we know?] The constructivist paradigm adopts a subjectivist approach to social inquiry, the process of the investigation leads to the construction of understanding(s), the inquirer is not objective and detached, but, rather, a collaborative agent involved with others in the social phenomenon.

Methodology [how do we find out?] The constructivist paradigm is based in hermeneutics, which asserts that interpretation and explaining involves a continuous process of gathering, analysing, critiquing, gaining understanding and interpreting. This is a cyclical process, the development of meanings and understandings are not definitive, but, rather, this is a social process of re-engagement with the newly constructed beliefs in order to develop a deeper and richer understanding and evaluate the substance of the new beliefs.

The role of the researcher and the interpretative nature of analysis in the context of a constructivist epistemology are in evidence in the current study and are developed in the next sub-section relating to the theoretical perspective employed.

Theoretical Perspective

Related to the constructivist epistemology the researcher approached participants' meanings from the theoretical perspective of interpretivism, seeking to disentangle the multiple meanings held and articulated by the participants in the context of the semi-structured interview data. Interpretivism can be traced back to the thinking of Max Weber and his calls for 'understanding' and 'interpretation' in the social and human sciences as distinct from the emphasis on 'causality' within the natural sciences. As outlined by Crotty (1998, p.67) 'the interpretivist approach...looks for culturally derived and historically situated interpretations of the social life-world' whilst Blaikie (1993, p.96) tells us that interpretivism 'entails an ontology [state of being] in which social reality is regarded as the product of the process by which social actors together negotiate the meanings for actions and situations.' Creswell (2002) highlights the significant role of the researcher in respect of interpretive research as through the process of data analysis he/she makes a personal assessment of the theme or themes that captures the major categories of information. The interpretation one researcher may make may be different from that of another but that is not to say that one interpretation may be better or more accurate than another rather that the researcher brings their own perspective to their interpretation being influenced within the social context akin to the constructivist understanding of knowledge. It is in this regard perhaps that the materials produced by interpretive methods are regarded by many quantitative researchers as unreliable, impressionistic and not objective (Denzin & Lincoln, 2006). However, Lichtman (2006, p.111) outlines how researchers in the qualitative-interpretive tradition, inspired to some extent by the theory and practices of grounded theory are open to the findings the analysis generates rather than setting out to prove or disprove a certain point or hypothesis and also acknowledges the significance of the researcher in the context of interview analysis, stating that: 'we cannot reconstruct their biographical accounts without also reflecting our perceptions and possible positions concerning the issues at stake.' This may also be applied to the process of interviewing where the line of questioning may be influenced by researcher perception and position and where the transcript produced may be seen as a socially constructed artefact, being

constructed by both interviewer and interviewee. Lichtman (2006, p.117) goes on to state how in qualitative research each idea and interpretation is filtered through the mind of the researcher and that:

You are not trying to do away with your role as you would if you were conducting traditional experimental research. You are not trying to be objective. You will take the role of constructing and subsequently interpreting the reality of the person being interviewed, but your own lens is critical.

Based on research work not dissimilar in methodological approach to that presented here Ball (1994) writes about issues of interpretation when interviewing ‘elite’ policy makers and makes the point that methodologically such data can be understood and interpreted in at least three different ways.

- Firstly, as ‘real stories’: as accounts of what happened, who said what, whose voices were important. According to Ball (1994, p.109): ‘what is of interest here are descriptions of events, the account of characters and key figures, moments and debates ‘inside’ policy. This is the ‘how’ of policy, the practicalities.’
- Secondly, as discourse: as ways of talking about and conceptualising policy, such conceptualisations providing justification for certain policy solutions in terms of why one way rather than another.
- Thirdly, as interest representation: ‘this is data as indicative of structural and relational constraints and influences which play in and upon policy making. In particular, the ways in which policy making within the State is related to the ‘needs’ of capital and civil society or to the technical problems of the State itself. This is the ‘because’ of policy’ (Ball, 1994, p.109).

In essence the same data can be subject to different types of analysis and levels of interpretation. In terms of Balls categorisation the emphasis on the accounts of key figures, the practicalities of policy and policy implementation, consideration of the rationale or justifications, the nature of the discourses and the influences or interests brought to bear are most evident in the current study. Ball also flags the complexity of dealing with such ‘direct evidence’ as it exposes the researcher to contradictions and incoherence in the data which he must interpret. This was also evident in the current study.

Methodology

The methodology employed in this study is a form of narrative analysis and within that the method of data collection is semi-structured interviews. Narrative analysis acknowledges the story-like components within interviewees' accounts, in this case reflecting their particular involvement, either directly or indirectly, in the policy making process and their review of the resultant implementation structures, processes and outcomes. Earthy and Cronin (2008) are of the view that since story-telling is a natural part of conversation it is not surprising that research methods focused on accessing an insider's understanding of the social situation or experience will allow for and facilitate the telling of stories, which most often follow a particular chronology of events. 'Personal accounts' is just one form of narrative research as identified by Casey (1995). In this case the emphasis was on the content of the narrative as distinct from the narrative form. As developed subsequently the researcher employed a categorical approach to narrative analysis by comparing all references to selected phenomenon across the nineteen interviews conducted.

Method

Much has been written about prevalence of the interview based approach to research in the social sciences to the extent that Denzin and Lincoln (2006, p.63) refer to the prevalence of the 'interview society' in the context of US based research in particular. In line with this Lichtman (2006) points out that the interview is the most common method of data collection in the broad sphere of qualitative research. The interview has evolved over time to reflect three major forms, in Denzin and Lincoln's (2006) terms: structured, unstructured and open-ended or to use the typology of Lichtman (2006): in-depth, semi-structured and informal/casual. With that there has been a corresponding shift in the underpinning epistemological consideration. The structured interview has been very much grounded in the positivist approach where knowledge or meaning is viewed as objective or true with the emphasis on the establishment of what may be considered as 'fact.' In this view the interviewer is considered as objective and unbiased and the interview as a neutral tool of data gathering which produces a scientifically reliable outcome. Consistent with the epistemological position and theoretical perspective employed in this study thinking has very much moved on such that the interview is now seen as a conversation where reality is constructed by at least two people (the interviewer and the interviewee) and that 'the interview produces situated understandings grounded in specific interactional episodes'

(Denzin & Lincoln, 2006, p.48). Coming from this perspective the interview is seen to be influenced by the personal characteristics of the interviewer rather than as a neutral tool of data gathering and the transcript produced as a negotiated artifact collaboratively and actively produced by interviewer and interviewee (Silverman, 2006). According to Denzin and Lincoln (2006, p.63) the interview has become the contemporary tool of storytelling, where persons divulge life accounts in response to interview inquiries. In line with this an interview does not provide direct access to the facts, although some data by virtue of a process of triangulation may be deemed to be factual in nature, but consistent with the narrative approach, what an interview does produce is a particular representation of an individual's views or opinions. The validity of any such account or of a researcher's interpretation may be affected by human bias or difference (Silverman, 2006). In the words of Fielding and Thomas (2008, p.260) 'interviewers are human beings not machines' although Kitzinger (2004, cited in Silverman, 2006, p.129) asserts that constructionism as an underpinning epistemology disputes the possibility of uncovering 'facts', 'realities', or 'truths' behind the talk, and treats as inappropriate any attempt to vet what people are saying for its 'accuracy', 'reliability', or 'validity' thereby sidestepping altogether the positivist problems raised (Kitzinger, 2004, p.128).

In the case of the current study the semi-structured interview guide (sent in advance of interview) provided participants with the outline frame work for the interview, indicating the particular themes or topics which were of particular interest to the researcher thus contributing to a climate of openness between researcher and participant as well as facilitating prior preparation by the participant if desired. The research interview approach utilised in this study was underpinned by the assumption, located in the researcher's constructivist epistemological position, that the researcher carrying out research interviews is not a neutral passive 'bystander' but, rather, an active agent influencing the process. Wishing to gain the best understanding possible of each interviewee's perspective the researcher during the course of interviews drew on unplanned follow up questions which aimed to facilitate this by seeking clarification and elaboration where necessary or desirable in the judgment of the interviewer/researcher. This was in the context of the semi-structured interview protocol and recognises that the interviewee by virtue of their responses can affect the direction the interview takes, within the boundaries of the structure constructed by the interviewer. However recognising the responsibility to collect data in a fair and non-

biased manner it is pertinent to clarify that the follow up questioning employed was for the purposes of clarity and elaboration rather than for promoting any researcher agenda. The interview or transcript produced from this process may hence be seen as a negotiated dialogue involving both the researcher and interviewee.

Generally the interviews conducted were sixty to ninety minutes in length. Each interview was recorded digitally and transcribed in full by a professional transcriber employed by the researcher. In each case the interview was listened through in its entirety by the researcher shortly after it had taken place and notes regarding the main points raised, the setting, and the conduct of the interview were written up as soon as was feasible post-interview. It was intended that these notes would help to bring back the context of the interview for the purpose of analysis later on in the research process.

Interviewees

The study employed ‘purposeful’ sampling whereby participants were targeted, informed by knowledge of context, on the basis of who could best help the researcher understand the ‘central phenomenon’ (Creswell, 2012, p.206), articulated as follows in the form of the research questions presented at the beginning of this chapter:

- What approach was taken to the development of DES policy in relation to ICTs in post-primary education (specifically Schools IT2000)?
- What factors have influenced DES policy in relation to ICTs in post-primary education?
- How has post-primary ICT policy been implemented to date? What have been the resultant outcomes?
- What are the related policy implications of findings for future DES post-primary ICT policy?

Interviews were conducted in two phases. Phase one aimed primarily to glean meso level perspectives on developments and as such targeted representatives of the partners in education as well as the academic constituency. This series of interviews took place close to the end of Schools IT2000 and aimed to glean a series of perspectives which would inform the follow-up macro level phase which targeted representatives of those agencies identified as being central to ICTs in education within the State, both in terms of policy and

policy implementation. As such the Phase 2 interviews drew perspectives and representation from the DES, the National Centre for Technology in Education (NCTE) and the NCCA as well as from the business/industry constituency given the significant influence of this group as espoused by Phase 1 interviewees. Many of the key policy actors and all of the core agencies are represented within the Phase 2 group. This second phase of interviews took place less than two years after the first phase thus facilitating considered reflections by phase two interviewees.

The semi-structured interview schedules utilised for Phases 1 and 2 are included as Appendices A and B respectively. Both schedules addressed the main issues of interest as reflected in the overarching research questions presented above. However the Phase 2 schedule was adjusted to reflect developments with respect to time as well as being modified in light of the first phase of interviews. Within both Phases there was slight modification to the schedule as appropriate depending on the profile of the individual interviewee.

All those who were contacted to request an interview contributed as requested apart from one potential interviewee (a key Ministerial advisor) who initially agreed but was then uncontactable to make the follow-up arrangements. Once started the interview process developed a certain momentum as interviewees talked about one another in the natural course of their interviews and in some cases suggested relevant others. Some suggestions were followed up on whilst others for reasons of time and anticipated relevance were not. In total nineteen interviews (with twenty interviewees) were conducted over the course of the research project. Interviewees are detailed in the following tables.

Phase 1 Interviewees (primarily Meso level)

Sinead Breathnach	National Coordinator School Development Planning Initiative (SDPI) 1999-2010. Representative for the Joint Managerial Body (JMB) on the NCCA technical group for ICT in education.
Cyril Drury	Freelance consultant employed as one of the two researchers to draft proposals for consideration by the DES ICT Steering Group having previously acted in a similar capacity to the Estonian government. Formally a second-level teacher and member of the CESI.
Conor Galvin	Academic specialising in ICT policy for schools, occasional consultant to the DES and NCTE in relation to technology and education, contracted to complete the evaluation of the SIP project.

Eddie Guilmartin	Second level teacher and long stranding member of the CESI – CESI representative on NCCA and NPADC committees.
Seamus Knox	NCTE SIP National Co-ordinator post launch of Schools IT2000 (1998-2001). Formally a second-level teacher and member of the CESI.
Moira Leydon	ASTI assistant secretary general for education and research. ASTI representative on the NPADC committee.
Aidan Mulkeen	Academic specialising in technology in education, former representative on the NCCA technical group for ICT in education, consultant to the NCTE in relation to the evaluation of Schools IT2000.
Elizabeth Oldham	Academic and long standing member of the CESI.
Tomas O’Broin*	Former IT Advisor based in Blackrock Education Centre and long standing member of the CESI.
Seamus O’Cannain*	Former Director of Blackrock Education Centre and member of the DES ICT Steering Group.

*O’Cannain and O’Broin were interviewed together hence there are a total of 19 interviews involving 20 participants.

Phase 2 Interviewees (primarily Macro level)

Sarah Fitzpatrick	Deputy Chief Executive of the NCCA with a particular interest in the area of ICT in education.
Michael Hallissey	Freelance consultant employed as one of the two researchers to draft proposals for consideration by the DES ICT Steering Group. NCTE National Co-ordinator post launch of Schools IT2000.
Frank Kelly	Inspector in the DES at the time of Schools IT2000. Member of the DES ICT Steering Group.
Kevin Marshall	Microsoft Ireland Education Manager, IBEC representative on the NCCA technical group for ICT in education.
Jerome Morrissey	Director of the NCTE from 1998-2011.
Seamus McLaughlin	Principal Officer (Head of IT) in the DES at the time of Schools IT2000. Member of the DES ICT Steering Group.
Gearoid O’Conluain	Deputy Chief Inspector in the DES at the time of Schools IT2000. Member of the DES ICT Steering Group.
Paul Sweetman	Director of IBEC's technology sectors ICT Ireland and the Irish Software Association. IBEC representative on various educational forums.
Frank Turpin	Intel Ireland Education Manager at the time of Schools IT2000. Former IBEC representative on the NCCA technical group for ICT in education.
Alan Wall	Principal Officer in the DES ICT Policy Unit/Teacher Education Section.

In addition to targeting the meso and macro level perspectives the researcher was also mindful of ensuring representation (over the course of the two interview phases) from a

number of constituencies identified as significant by the researcher. The table below details these constituencies and list interviewees by their primary constituency as assigned by the researcher. As reflected in the interviewee profiles above there was significant duplicity and overlap to the roles played by many interviewees. Thus the table below provides only a simplified overview of interviewees and their constituencies which does not wholly reflect the multiplicity of roles held by some interviewees, as reflected in their profiles. With a small number of exceptions the top column corresponds to interviewees in Phase 1 (meso level) and the bottom column to interviewees in Phase 2 (macro level).

Summary table of primary interviewee constituencies across both interview phases

Academic	Partners/Practitioners	Policy Consultants
Conor Galvin Aidan Mulkeen Elizabeth Oldham	Eddie Guilmartin (CESI) Moira Leydon (ASTI) Tomas O’Brion (IT Advisor) Seamus O’Cannain (Ed Centres)	Cyril Drury Michael Hallissey
Ministry	Key Agencies	Business/Industry
Frank Kelly (DES) Seamus McLaughlin (DES) Gearoid O’Conluain (DES) Alan Wall (DES)	Sinead Breathnach (SDPI) Sarah Fitzpatrick (NCCA) Seamus Knox (NCTE) Jerome Morrissey (NCTE)	Kevin Marshall (Microsoft) Frank Turpin (Intel) Paul Sweetman (IBEC)

Research Ethics

A number of documents were developed which fed into the process of interviewing, specifically a letter of invitation to participate, a statement of ‘Research Principles and Procedures’ which set out the ethical conditions pertaining to the study, and the semi-structured interview guide. The letter of invitation provided a short note to introduce the research topic, invited participants to take part in the research, and gave ethical assurances. The statement of ‘Research Principles and Procedures’ was based on the principle of informed consent which according to Bulmer (2008, p.150):

provides that persons who are invited to participate in social research activities should be free to choose to take part or refuse, having been given the fullest information concerning the nature and purpose of the research, including any risks to which they personally would be exposed, the arrangements for maintaining the confidentiality of the data and so on.

With a view to promoting a relationship between researcher and interviewees which was collaborative, critical and constructive, the following protocols were drafted and circulated to potential participants as the statement of ‘Research Principles and Procedures’:

1. The research will forward a copy of the Interview Schedule and the Principles and Procedures of the research to the interviewee in advance.
2. Permission to audiotape the interviews will be sought in advance of the arranged meeting.
3. The researcher is committed to open discussion and reporting and wishes to present accounts that acknowledge the identity of individuals and institutions. However, where the interviewee requests personal anonymity, this will be respected.
4. Unless the interviewee indicates otherwise, it is assumed that all exchanges between the researcher and the interviewee are on the record.
5. The author will submit interview transcripts for comment and clearance to those interviewees who wish to receive them. Such comments will be used to ensure the overall accuracy of the research report and to verify the researchers’ interpretation of the interviewees’ responses.
6. The researcher may request clarification on certain issues that arose during the interview.

As per point 5 above interview transcripts were sent to all interviewees for the purpose of comment and clearance. Comments were invited within a specified timeframe of one month with the covering letter indicating that if a response was not received within this timeframe it would be assumed that the interviewee was satisfied for relevant excerpts to be included in the thesis on the basis that, as per the ‘Principles and Procedures’, it was understood that all exchanges were on the record. Nine of the twenty interviewees replied with one identifying some typographical errors in the transcript, one requesting the ‘softening’ of two particular quotes, two providing some additional points and two requesting details of the particular excerpts to be included. In the case of the latter two a statement of all excerpts attributed or quoted was provided prior to production of the final version of the

dissertation. No further response was forthcoming from one interviewee. The second interviewee requested some mainly grammatical changes although no significant amendments to the substance of the quotes or references being attributed were sought.

Analysis

Creswell (2012, p.238) describes qualitative data analysis as ‘an eclectic process’ and elaborates how, consistent with the epistemological and theoretical perspectives adopted in this study:

Qualitative research is ‘interpretive’ research, in which you make a personal assessment as to a description that fits the situation or themes that capture the major categories of information. The interpretation that you make of a transcript, for example, differs from the interpretation that someone else makes. This does not mean that your interpretation is better or more accurate; it simply means that you bring your own perspective to your interpretation.

This view which emphasises the significance of the researcher was strongly reinforced by Lichtman (2006, p.117) who stated that:

In qualitative research, each idea, interpretation, and plan is filtered through your eyes, through your mind, and through your point of view. You are not trying to do away with your role as you would if you were conducting traditional experimental research. You are not trying to be objective. You will take the role of constructing and subsequently interpreting the reality of the person being interviewed, but your own lens is crucial...Accept that you, as the researcher, serve as a filter through which information is gathered, processed and organised.

The semi-structured interviews sought to explore and gain participants’ views and understandings in relation to the topics and themes identified in the interview schedule which in turn were formulated on the basis of and with reference to the research questions specified above. In order to bring a level of rigor and a systematic approach to the management and analysis of the data a specialist qualitative analysis software programme called NVivo was utilised for which the researcher participated in specialist training prior to its use. According to Lichtman (2006) there is no one standardised approach to data analysis within qualitative research but a systematic approach to analysis and interpretation, such as that facilitated by NVivo, is needed to bring order and understanding to qualitative research. Software such as NVivo aids the researcher in managing the data and assists with the analysis, however unlike packages such as SPSS which enables analysis within the quantitative or positivist sphere NVivo merely facilitates the analysis by the researcher to the effect that theory is built or generated by the researcher rather than by the package

itself. This reflects the significance of the researcher within qualitative analysis as outlined by Creswell (2012) and Lichtman (2006) above.

NVivo is a tool which facilitates the researcher in the process of interpretation by enabling the general tasks of analysis such as amongst others storing data, enabling coding and retrieval of coded segments, and the organisation of data to produce outputs. Lewins (2008, p.401) outlines the following general tasks of analysis which can be assisted by code-based theory building software such as NVivo:

- Storing textual data – providing immediate access to data files
- Exploration and discovery by searching
- Adding memos or annotations anchored to text
- Emergent coding (bottom-up)
- Theory-based coding (top-down)
- The organization of codes
- Collection of more detailed codes into more abstract broad brush concepts
- Retrieval of coded segments
- Mapping connections between codes – creating graphic models
- Organising data to enable interrogation
- Linking to and between parts of text and other files
- Searching the database and the coding schema, testing ideas, interrogating subsets
- Generating reports/output

There are a number of approaches to the process of data analysis within qualitative research as outlined by Lichtman (2006) and Fielding and Thomas (2008) amongst others.

According to Fielding and Thomas (2008, p.259):

Qualitative analysis involves the systematic consideration of the data to identify themes and concepts that will contribute to our understanding. Themes and concepts that are identified in one interview are compared and contrasted with similar material in the other interviews. New themes that emerge in subsequent interviews necessitate further analysis of previously coded interviews. The analytical and practical issues of this process stem from a need to both compare and contrast segments of data from different interviews and to maintain the chronological integrity of each interview. The analytical challenge is the identification of thematically similar segments, both within and between interviews.

The approach taken in the current study is that described by Lichtman (2006, p.163) as the *generic approach* where the researcher looks for general themes or narratives within the

data, focusing on the content rather than the form or structure of the transcript. Notwithstanding the significance of the personal perspective of the researcher with respect to the interpretative process as outlined above, there is significant debate amongst methodologists regarding how the coding process should develop, whether ‘top-down’ as influenced by the relevant literature/theory or ‘bottom-up’ emerging from the data. Lichtman (2006) acknowledges that there are differing views regarding the emergence of codes with some believing that they should be identified a priori and others believing they should emerge from the data via a process of reading and thinking about the text. Irrespective of the approach adopted, which Lichtman (2006) believes varies by individual and type of data, the goal is to arrive at a manageable number of codes.

In the case of this study codes were generated by means of a combination of top-down and bottom-up coding, the top down coding influenced by the theory/literature whilst retaining openness to new codes/theory emerging from the data. During ‘first-pass coding’ (Richards, 2009) the data were coded by theme or topic using free nodes within NVivo (the term node being used here to describe the place where the software holds a code or category). A ‘rule for inclusion’ was devised in respect of each free node. As described by Lichtman (2006, p.161): ‘The first pass through the data involves open coding the data into analytic themes in order to apply initial codes or labels to the segments of the data. The categories/codes derived may come from the theory or the literature or from the data themselves.’ Within this process sections of data from the transcripts were coded to the free nodes. The researcher did not force a particular unit of analysis e.g. a sentence, line or paragraph, but coded solely on the basis of relevance to the stated ‘rule for inclusion’ with the result that the sections coded varied in length but most were of the order of a number of lines. Some data was coded to more than one node as appropriate.

However free nodes have limited usefulness in terms of organising the data into manageable themes which can be used to address the research questions. During the second stage of coding the free nodes were arranged into tree-nodes by introducing the research questions. A tree-node is formed when free nodes with a logical connection to one another or which contribute to a common theme are brought together. Within these trees (or parent nodes) the free nodes become branches (or child nodes). Free nodes can become branches of more than one tree. Organising the data into the tree node framework involved thinking

about the data and examining the nodes to evaluate the legitimacy of their position within the emerging conceptual framework. This process may be seen to be interpretative in nature as the researcher aimed to link the first pass codes to one another and to the research questions.

Finally a third stage of ‘coding on’ revisited the initial codes with a view to refining the initial broad brush coding. Richards (2009, p.107) advises that: ‘Coding with a broad brush, you can gather everything about a general topic in one place. Then, as the subtler meanings of your data emerge, revisit and code on from that broad category to codes reflecting finer dimensions.’ Fielding (2008, p.347) labels the process of coding on as ‘axial coding’ in which similar codes are clustered together and others sub-divided and that whilst ‘open-coding can be seen as fragmenting the data, axial coding can be seen as informing the analysis by bringing it back together in a web of relationships.’ The exploration of finer dimensions through the process of coding on brought a deeper level of engagement with the data, adding another level of rigor to the methodology and the resultant interpretations produced in the form of research findings. An example of coding-on can be drawn from the *Outcomes* node which through this process was subsequently re-coded into two associated sub-notes *Evaluation* and *Achievements*. In turn the *Achievements* sub-node was re-coded into *Infrastructure, Training, Profile* and *Other* sub sub-nodes. There was similar coding on for the majority of the initially constructed free-nodes facilitating and requiring a deeper level of engagement with the data and thus producing a more finely grained network of codes.

Documentary Evidence

The use of documents is suggested by May (2001) as a valuable means of enhancing understanding in a social research context by situating contemporary accounts within a historical, social or political context. As part of the data collection a large number of documents were gathered, often donated by interviewees, as primary sources of data analogous or supplementary to the research interviews. These documents included copies of minutes from the DES ICT Steering Group meetings (five meetings in total), as well as documentation relating to Terms of Reference for the Group, and the various iterations of the proposals considered at this time. These sources of data are drawn on to a large extent in the account of the policy making process as understood and presented by the researcher

in Chapter 5. These documents may also be seen as bringing an element of triangulation to the study as analogous to the set of interviews they provide an additional insight into events. Such sources provide a basis for comparison and cross-checking of interviewees accounts as well as helping to map out the timeline and the detail of the key events and considerations of the time. The key documents utilised were as follows:

Minutes of ICT Steering Group Meetings: Jan 24th, Feb 10/16/26th, and March 10th 1997.

Integration of Information and Communication Technologies (ICTs) into First and Second-Level Education – Steering Group to Develop Proposals for Consideration by the Minister – Terms of Reference, Jan 17th 1997 (DES, 1997b).

Key Statements in Relation to ICTs in Education – document prepared for Department of Education ICT Steering Group, Feb 10th 1997 (DES, 1997c).

ICTs in Education: Project Descriptors – document prepared for Department of Education ICT Steering Group, Feb 26th 1997 (DES, 1997d).

Report of Steering Group on Information and Communication Technologies (ICTs) in First and Second-Level Education – Drafts produced in March, April and May 1997 (DES, 1997e).

Validity and Reliability

Whilst some qualitative methodologists view any attempt to validate researcher findings or interpretations as inappropriate Creswell (2012) suggests that the credibility of interpretations can and should be validated through one of a number of processes which include as primary forms triangulation, member checking and auditing. This is in addition to the researcher being self-reflective about their role in the research, how they interpret their findings and their personal history or biography that shapes their interpretations. In this case the process which Creswell (2012, p.259) describes as ‘member checking’ was undertaken as a validity exercise by the researcher. This involved asking interviewees to review a summary of the findings (Appendix C) and to comment on the accuracy of the interpretations presented by the researcher. Taking guidance from Creswell (2012, p.259) who outlines how: ‘You ask participants about many aspects of the study, such as whether the description is complete and realistic, if the themes are accurate to include, and if the interpretations are fair and accurate’ the researcher asked these participants to reflect and comment on whether the account presented reflected their lived experiences of the policy initiative under review.

In total fourteen responses were received to the validation exercise. Twelve of the fourteen respondents indicated mainly agreement (either full or partial) with the interpretations presented. Based on this feedback certain interpretations were reconsidered and a number of minor amendments were made to the findings chapters. These amendments (mainly in relation to the role and input from the CESI at the policy development stage) were also subsequently reflected in the summary of findings presented in the concluding chapter.

In addition internal auditing and self-checking was undertaken by the researcher once the initial draft of the findings chapters was complete. This involved re-visiting the original transcripts checking the accuracy of the researcher interpretations in light of the original data. This was undertaken as coding, and in particular first pass coding, is reductionist in nature (Lichtman, 2006, p.161) and thus may be susceptible to the exclusion of relevant data, should that data not fall with the boundaries or rules for inclusion applied by the researcher. In this case a small number of additional pieces of data or quotes were unearthed with supported the main narrative derived by the researcher. The fact that only a very small amount of additional supporting data was unearthed via this process provides support for the robustness and reliability of the data analysis and coding undertaken by the researcher as the main data analysis for this study.

Summary and Conclusion

This chapter has detailed the focus and methodology for the current study and has addressed the underpinning philosophical considerations as reflected in the epistemological and theoretical perspectives brought to bear on the work by the researcher. As distinct from the positivist perspective which assumes and pursues objective truth the constructivist epistemology is based on understating multiple participant meanings constructed as a consequence of their engagement within a social context. The role of the researcher in disentangling participant meanings is a significant aspect of the interpretivist perspective which has underpinned and informed the data analysis for this work.

This study has utilised a form of narrative analysis as the over arching methodology and within that the method of data collection was semi-structured interviews. Purposeful sampling was employed to target interviewees whom the researcher viewed as possessing the insights, by virtue of their role and/or related experiences, which would enable

addressing of the central foci for the study as reflected in the research questions. Many interviewees also contributed documentary evidence which in addition to providing the researcher with further evidence also enabled an element of triangulation. Data analysis was assisted by the use of a specialist software package NVivo. Issues relating to ethics and validity were also considered with respect to the methodology employed.

Chapter 5 Findings 1 - The Development of Schools IT2000

Introduction

This chapter aims to detail the process which led to the development of Schools IT2000. Drawing on documentary and interview evidence it outlines the Terms of Reference, membership and workings of the Department of Education ICT Steering Group and details the chronology of events and milestones which led to the launch and publication of the Schools IT2000 policy. This chapter draws on unpublished documentary evidence and aims to capture the detail of the events reflecting the mechanics and timeline for the process as well as the evolving and developing nature of the policy proposals over the course of the short developmental period. As well as capturing and preserving the ‘story’ of policy development for the purposes of historical archiving this chapter also aims, by virtue of tracing and documenting the policy origins, to set the context for the subsequent analysis of policy influences and implementation.

Department of Education ICT Steering Group: Terms of Reference

The DES ICT Steering Group was the mechanism set up by then Minister for Education Niamh Bhreathnach to develop proposals to support the increased use of ICTs in both primary and post-primary education ‘in a manner which integrates with the curriculum and ensures that the optimum educational outcomes are derived from the use of technology in schools’ (DES, 1997b, p.1). The Terms of Reference outlined requested that the Steering Group use the recent Submission to the Information Society Steering Committee (Department of Education, 1996b) as a starting point for the development of its proposals and the initial six week timeframe imposed provided an indication that from the Department of Education’s perspective most of the thinking required was already in place and outlined in the Submission document. A total of seven Terms of Reference were outlined for the thirteen members of the Group, two of whom were subsequently appointed as the principal researchers with responsibility for preparing proposals for consideration by the Group. Their appointments were limited to twenty man days each and this may provide an indication regarding the Department of Education’s perspective on the task at hand. This may be interpreted in one of two ways: that consistent with the short timeframe most of the thinking was already in place or alternatively as an underestimation of the complexity of the task at hand. Significantly no indication of time frame or budget allocation was

provided at this stage although the Terms of Reference outlined that ‘proposals should be based on the assumption that financial resources are limited and that the amount available in any year for enhancement of IT facilities in schools will have to be decided in the content of the educational budget and other educational priorities in that year’ (DES, 1997b, p.3). The additional Terms of Reference requested that the Steering Group place a strong emphasis on the skilling of serving and trainee teachers, on achieving good value for money in any investment by considering projects which would involve schools in complementary purposes and build on existing activities and links within and between schools, Vocational Educational Committees (VECs), Education Centres and the Department of Education. Indicating the influence of the findings from the MINERVA study (OECD, 1994) the Group was to ensure that a bottom up rather than a top down philosophy underpinned its proposals and that any pilot projects or schemes proposed included an element of local contribution. Finally the Group were asked to produce an estimate of the financial, staff and physical resources required for implementing each proposal.

Department of Education ICT Steering Group: Group Membership

The Steering Group consisted of thirteen members, with two members of the Group appointed to act as researchers with particular responsibility for preparing proposals for consideration by it. One of the appointed researchers (Cyril Drury) was an independent researcher and consultant on IT and education, with a post-primary background, and who had previously worked on policy for IT in education in Eastern Europe. Drury had previously been one of the most influential authors of the Department of Education Submission to the Information Society Steering Committee and an active member of the CESI. The second appointed researcher (Michael Hallissey) was from a primary background and had recently authored a publication on the use of the Internet in Irish schools as well as founding a network of schools to share and promote the use of technology. Eight members of the Group were from the Department of Education:

- Three members at Assistant Principal Officer level,
- Two at Principal Officer level including the Principal Officer from the DES’s IT Unit who had previously authored a submission to the DES on IT and education in late 1995 and who may be seen as a driving force in this regard,

- Two at Inspectorate level and one at Assistant Chief Inspector level.

The other group members consisted of one Education Centre Director, one primary teacher/college of education lecturer, and one post-primary teacher/NCCA education officer. The absence of the ‘partners in education’ including management bodies, parents associations and teacher unions may be explained to some extent by the short timeframe proposed and an unwillingness hence to engage in a potential debate influenced by the varying sectoral interests although the Terms of Reference did recognise the need for a consultative process:

It is envisaged that the Minister would issue the proposals of the Steering Group to the Partners in Education for their consideration. It is also envisaged that broadly based consultative groups (one or more), including representation from the Partners in Education, would need to be established to support the implementation of any initiative which is ultimately approved by the Minister and the Government (DES, 1997b, p.2).

Drury in his interview outlined how at the time he asked the Department of Education to write to all the ‘partners in education’ to inform them of developments and to indicate that he would be happy to speak with them. Galvin aired the view that notions of partnership for ICT policy suffered at this time as ‘a lot was happening very quickly’ and as a consequence there were no lines of communication with those directly involved too busy to engage in any meaningful consultation process.

The Workings of the Department of Education ICT Steering Group

The following section details the work of the Steering Group over the course of the five meetings which took place between January and March 1997. The short time and the desire to produce a policy proposal within a six week timeframe reflects the sense of urgency and ‘rush’ which was in evidence at this time. Initially three meetings of the Steering Group were scheduled over a month long period from the end of January to the end of February 1997, with proposal drawn up by the Group for consideration by the Department of Education’s Top Management Group (TMG) due for submission by February 28th 1997. Hallissey recalled how it was ‘a very quick committee’ and went on to detail the mechanics of the groups’ workings: ‘we were given Terms of Reference by the chairman of the committee, we prepared draft materials for the committee and within six months a policy framework was produced.’ O’Cannain confirmed this version of events detailing how

‘Cyril and Michael presented material at each meeting, and it was commented on... that was the way it was.’

Meeting 1: Timeframe and Terms of Reference

The issues of cost and timeframe formed a backdrop to the main agenda from the outset with the minutes from the first meeting on January 24th documenting the recommendation of ‘a phased approach to larger cost initiatives.’ The issue of timeframe manifest itself both in relation to the time available to the Group for deliberations and reporting, as well as in relation to an appropriate timeframe to plan for, with subsequent documentation emanating from the Group recommending a minimum of a three-year timeframe. In terms of the time available for deliberations and reporting a clear sense of urgency was created when the Group were informed of the Minister of Education’s wish that its findings be presented by the 28th February i.e. in approximately one month’s time. This initial meeting addressed the need for an ICT framework, outlined the background to it including circulation of a list of relevant source material (including the Department of Education Submission to the Information Society Steering Committee (Department of Education, 1996b)), and discussed the Terms of Reference for the group (DES, 1997b). It was agreed that the Terms of Reference as presented be adopted and that the broadest view of post-primary education would be taken so as to include the PLC sector and ‘out of school’ education and that the Group would remain as constituted presently hence continuing to exclude representation from the partners in education. It was agreed that the Group would produce a set of proposals which would have a bottom-up focus and that the researchers would communicate with the partners in education during the course of their work, as well as exploring possible linkages with existing or planned initiatives such as the TechCorp project and the EU Commission Joint Call for Multimedia. The notion of an ICT framework is significant in relation to perception and understanding of the groups’ remit.

Meeting 2: Key Statements in Relation to ICTs in Education

At the outset of the Groups work the Assistant Principal Officer from the DES’s IT Unit made contact with Department of Transport, Energy and Communications with a view towards initiating an arrangement with the then state sponsored Telecom Eireann whereby all state funded schools could avail of free basic rate ISDN connection to the Internet and free Internet related calls during certain hours. Although no formal response was

forthcoming the minutes from the second Group meeting on February 10th document a verbal response which indicated that Telecom was unlikely to provide free school connection to the tune of the estimated cost of over £1 million. Aside from this set back the main business of the second Steering Group meeting on February 10th centered on a presentation of the work completed to date by the researchers and the circulation of an accompanying eighteen page document detailing 'Key Statements in Relation to ICTs in Education' (DES, 1997c). This document drew on three specific sources namely the *White Paper on Education* (Department of Education, 1995), the *OECD Review of the Minerva Project* (OECD, 1994) and the *Draft Report of the IT Integration Project (ITIP)* (Department of Education, 1996) and recognised the complexity of policy implementation, the need for mid to long term plans, and the requirement for teacher development/support at the national, local and school levels and within pre and in-service teacher education. It recognised also the need for resourcing in relation to hardware, software and physical infrastructure (school buildings, telecommunications infrastructure, multimedia networks), and drew attention to the significance of curricular revisions and frameworks to support technology integration. The primacy of the role of the NCCA was outlined in this regard as was the need for teachers to adapt their professional teaching practice so as to capitalise on the opportunities provided for by means of technology.

Following the presentation of this document the minutes document the ensuing discussion which focused on future deliverables from the group. The main points arising being the need to preface its proposals within a suggested framework for supporting the developing use of ICTs in education (with the Group mandating the researchers to investigate a number of policy initiatives) and the need to produce concrete proposals for consideration by the Minister which could be put into effect 'over a reasonable period of time, on a phased basis for larger initiatives', again indicating a vagueness in relation to cost and timeframe. A number of possible 'project initiatives' were discussed including: the establishment of a central support for ICT implementation, perhaps through an Education Centre; the provision of IT resources and the Internet to schools; the availability of the European Computer Driving Licence (ECDL) for basic skills provision (unclear from the minutes if this related to teachers or students or both); the inclusion of ICT modules in teacher training; the integration of ICTs across core curricular subjects with the possibility of a study to consider one typical subject; the use of libraries as resource centres for ICTs; links

between software developers and teachers to develop resources specifically for the Irish context; and, the possibility of a pilot project with respect to use in special education.

Meeting 3: Initial Strategy and Framework

At the third meeting of the Steering Group on February 16th an initial strategy and framework for implementation was outlined by the researchers. The process documented included consultation by means of meetings and telephone briefings with a number of representatives from the 'partners in education' including the teacher unions and the NCCA. The researchers outlined that whilst there was commonality amongst the selection of partners consulted regarding ICT as a national issue and priority (based on, for example, Ireland's ranking by the International Data Corporation (IDC) Index as being in the third division with regard to preparedness for the information age) the vision of how this priority might be addressed varied, which led the researchers to conclude that there was need for partnership to establish policy, source funding and manage implementation. The researchers linked the visions of the selected partners to their current stage of development with regard to ICT, outlining that their priorities in relation to resources and training were related to their current situation with regard to ICT. The researchers went on to outline a suggested framework for policy development and implementation which was based around a proposed National Institute of Education and Technology (NIET) in tandem with a newly established IT Policy Unit in the Department of Education, and supported by Regional Education Boards, Education Centres, Libraries, Colleges, Universities and Schools. It was proposed that the DES IT Policy Unit would coordinate DES activity in relation to IT in schools, and that the NIET would implement national policy on ICTs in partnership with the DES, the NCCA, the teacher associations and unions and the school management bodies. The NIET would also carry out research and dissemination at local and national levels, establish funding partnerships and act in an advisory role to the Education Centres. Roles were also outlined for the Education Centres (administration, clustering of schools, co-ordination, training, management of resources e.g. software cataloguing), Colleges of Education/Universities (training, continuous professional development, research, dissemination, evaluation) and Schools (provide for equity of opportunity in relation to ICT, provide access to the local community, develop a school plan) while reference was made to the role of the NCCA, the National Council for Vocational Awards (NCVA), parents and the business sector in the facilitation of policy.

Meeting 4: The Four Proposed Projects

By the time the fourth meeting took place on February 26th 1997, the initial deadline for submission of proposals to the Minister for Education had passed. This meeting focused on the presentation of four projects developed by the researchers with a view towards promoting ICT use within education, accompanied by a justification for each one. The Projects presented were: 1) Centre for Technology in Education (CTE), 2) Teacher Training Continuum (TTC), 3) Scoilnet, and 4) Schools Integration Project (SIP) (DES, 1997d). Projected costings and a suggested timeframe for each of the projects (two to three years) were also outlined. The minutes from this meeting record that following a discussion the projects presented were endorsed in principle but there was general agreement that the costings would need to be reconsidered and that the ICT Policy Unit proposed by the researchers under the CTE should be located within the Department of Education, given the critical importance of the present and future roles of ICTs for education and for economic development.

The four projects proposed and their related costings were as follows:

The Centre for Technology in Education (CTE) would via its Director take responsibility for the overall management and co-ordination of ICT Project initiatives and would support the Department of Education in developing a policy framework under the aegis of the National ICT Policy Group. It was proposed that the National ICT Policy Group would be based in the Department of Education and include expertise drawn from a number of Government Departments in addition to representatives of other public and private bodies. Furthermore it was proposed that the CTE would generate a body of research data to aid planning and implementation, ensure that project evaluations and disseminations were fully undertaken, initiate public-private partnerships with a view to maximising funding, and monitor global development in relation to ICTs in education. Costs of £150,000 per annum were outlined in respect of personnel and administration.

The Teacher Training Continuum (TTC) was proposed with a view to addressing the professional development of teachers, flagged by the researchers as a priority in facilitating ICT adoption in schools. A national forum on teacher training with respect to ICT was proposed as an initial step by the TCC, aimed at encouraging a proactive response from the providers of pre and inservice teacher education. A training needs analysis was identified as

a priority so as to identify needs and deficiencies amongst the cohort of teachers. Three variations in the required training were identified: (i) basic skills training aimed at developing confidence and competence in using the computer and associated technologies; (ii) awareness training aimed at developing knowledge of the educational potential of ICTs; and (iii) pedagogical training aimed at developing experience and confidence in using ICTs in the learning environment. The ECDL was identified as the means through which the basic skills provision could be met, with training delivered in Education Centres supported by a local IT advisor. It was proposed that each Centre, working in co-operation with four pilot schools would aim to deliver training to one hundred and twenty five teachers per year. Roles were identified for the In-Career Development Unit (ICDU) in supporting awareness training for teachers, as well as for the teacher associations and colleges/schools of education in the delivery of pedagogical training, with emphasis placed on the effectiveness of school and classroom based training. An accredited programme facilitated by a modular structure delivered through Education Centres and developed in conjunction with third level institutions was also proposed with a pilot to take place in four Education Centres. The projected cost for the TCC was £144,000 per annum.

The Schools Integration Project (SIP) was proposed with the intention of fostering experimentation by schools on a pilot basis. It was proposed that sixteen schools would work in partnership with four Education Centres with a view towards identifying appropriate policy, training and support models, pedagogical strategies and classroom resources. Human resources were identified as a necessary component of SIP financing with each pilot school to receive the equivalent of 0.25 of a teacher allocation per annum, with some of this time allocated to an IT co-ordinator within each pilot school and some to the provision of other teachers. SIP was to be supported locally by an IT Advisor based at each of the four Education Centres who would be primarily responsible for local management and national dissemination of the project. In similar vein to the Minerva Project (OECD, 1994) it was suggested that each cluster of four schools and Education Centre should work in partnership with a third-level college where an Academic Advisor might assist in formulating pilot proposals, school-based implementation and project evaluation. Work undertaken by teachers might be used for the purposes of accreditation by the academic partner possibly in the context of classroom based action research. It was outlined that where feasible schools should develop their own project proposals within a

framework proposed by the Academic and IT Advisor so as to encourage ownership and heighten commitment to the long term project goals. A list of priorities in terms of participating school characteristics were identified (including gaelscoileanna, special needs, small, rural, disadvantaged) and the desire for a balance between top-down and bottom up initiatives was clearly articulated. It was anticipated that the IT Advisor would also be a resource for the wider locality of schools during the timeframe of the project and that the third-level Academic Advisor would develop expertise in relation to ICT integration in schools which would act as a catalyst for further implementation. The projected costs were of the order of £400,000 per year.

The Scoilnet project was proposed with a view towards capitalising on the potential of the Internet to facilitate the sharing of documentation and resources. It was intended as a support to the sixteen schools taking part in the SIP Project by providing a website where participants could share their own content as well as publish progress reports and training materials. It was also intended to support the seven hundred primary and post primary schools that were identified as having already acquired their own Internet access. Possible uses identified were in relation to project dissemination, access to resources, provision of information, facilitation of co-operation and provision of support and advice in relation to equipment/infrastructure, and pedagogy including software and integration. It was also hoped that Scoilnet would be a means by which to increase public awareness of the role of technology in education. The costs projected were £103,000 per year.

Meeting 5: Extending SIP & Scoilnet

The fifth and final meeting of the committee took place on March 10th to consider the final draft documents prepared by the researchers. Following this it was intended that the document would be circulated to the TMG for consideration. The draft of the final report drew in particular on the Forfas (1996) document *Shaping our Future*, the European Commission *Bangemann Report* (1996), the Department of Education *White Paper on Education* (1995) and the *Draft Report of the ITIP* (Department of Education, 1996). Amalgamating the material which had been previously presented by the researchers at the Steering Group meetings, the draft recognised the complexity of the change required, advocated an incremental approach and recognised how educational uses had to-date been poorly defined. The need for policy and infrastructure and for dissolved management and

support structures incorporating roles for the proposed CTE, Education Centres, school clusters, local resource centres and third level educators were outlined.

Teacher training and development at both pre and in-service was identified as a significant requirement as was, drawing on the ITIP draft report, a curriculum framework within which to implement uses of ICT. It was recognised that this may in turn necessitate a change in teaching methods and approaches. A whole school approach was outlined as being preferable to reliance on individual action with justification of the pilot project approach on the basis of encouraging co-operation within and between schools and facilitating case study research in the area of ICT implementation encompassing analysis and evaluation of good practice. School based in-service provision was also advocated drawing on the *White Paper on Education* (Department of Education, 1995). A number of elements were identified in this draft as being of particular significance in ICT implementation: the support of the school principal; the IT co-ordinator; the school plan with respect to ICT; time for teachers to pursue ICT based initiatives; and the NCCA which was identified as having a key role in developing the curricular framework drawing on the ITIP recommendations. Whilst the projects outlined (CTE, TTC, SIP and ScoilNet) were constituted as presented previously by the researchers the draft document outlined an extended role for SIP than had been the case previously. In addition to supporting the schools involved in the SIP project (now extended to six clusters) an extended role for ScoilNet proposed supporting all schools already on the Internet with respect to technical queries, including the publication of fact sheets on infrastructure and hardware, and with respect to the provision of pedagogical support by drawing on the expertise of relevant agencies such as subject associations, the NCCA and the CESI. In effect an enhanced role for ScoilNet in relation to curriculum support was being proposed, acting as a central repository for resources and documents relevant to curricular implementation, including guidelines and sample technology use plans.

Availability of Funding

A review of the documentation produced over the course of the Steering Group indicates a significant diversity and increase in the projected costs for the four proposed projects and the overall costs including infrastructure provision for schools. The diversity of estimates may reflect an absence of data regarding the likely costs (including staffing) and

infrastructure requirements for schools and may also be reflective of the moving nature of technology costs and related provisions. The drafts provide some break down of the associated costs, distributed into four sub-categories of staffing, equipment, dissemination and training, and administration. The initial estimates for the four projects outlined costs of the order of £800,000 (£150,000 for the CTE, £144,000 for the TTC, £400,000 for SIP, and £103,000 for ScoilNet). Further drafts reflected an incremental increase in projected costings and by the time the final report was completed in late March 1997 the costs proposed for the four projects had risen to £19 million (£4m for the CTE and the ICT Policy Unit, £7m for the TTC, £6m for SIP, and £2 for ScoilNet), with an additional £11million pledged for infrastructure provision (a total of £30 million).

The initial uncertainty regarding the budget available stifled the work of the policy researchers in their attempts to draft policy proposals reinforced by the conservatism of DES personnel who were concerned with opening the floodgates in terms of expenditure both short and long term. This was reflected upon by Drury stating:

We had Terms of Reference ... there was no mention of any money at the time, and that would have been an issue. It was in many ways open ended... it's not as if we were told there's going to be 'x' amount of money, go off and design what should be done... I can remember very distinctly at some of those meetings being told that really it wasn't our job to suggest to come up with kind of grandiose plans but certainly there would have been a certain amount of conservatism around, and the role that some people in the Department would have seen... they would have been concerned about opening up the floodgates in relation to expenditure.

O'Cannain outlined how the prevailing mood of the initial meetings was in relation to 'what we can do for nothing' whilst Drury noted 'a figure of thirty thousand being mentioned at some stage.' Drury, Kelly and O'Cannain all detailed how the figure of 'one million' then arose which, from the perspective of Drury, caused concerns in the Department regarding the possible magnitude of expenditure. Kelly however was credited with placing the onus on a more significant investment 'to do something that's worthwhile' which lead to consideration of proposals costing in the order of £3m based on £1m in each of three key areas. As outlined by Drury:

From what I can remember we sat down and we said OK, there are a number of... different areas in which we need to invest, one of them being obviously the physical infrastructure, another one being teacher training, another being that we need to catalyse activity in the area... in terms of getting schools involved in sort of ground-up action research type projects... and we said okay, ballpark, if we had a million to go in each of these...

O’Cannain detailed funding of £5m being available when there was ‘a change happening in Government’ with each Minister looking for a ‘Millenium Project’ in which they could invest. As the policy deliberations in respect of ICT were relatively well advanced at this stage ‘suddenly £30m became available.’ O’Cannain saw a political dimension to the provision of this greatly increased funding which he viewed as overtaking the work of the Steering Group although he saw that the Group did produce ‘the bones of the document’ which was subsequently published as Schools IT2000:

I didn’t count them, but I recollect about half a dozen or so [meetings]... there was a point at which that Committee became emasculated because of political imperative... the opportunity came up, money, bang, and then, the Department didn’t need any further consultation because they had money...

As the up scaling occurred only towards the end of the drafting process very limited time was afforded to re-engaging with the proposals based on increased funding and the limitations of this were described by Galvin as follows:

That working group went away understanding they had a million to spend originally, and when they went back with their documentation they were told no, what we’re looking at here is much, much bigger, we’re looking at 40 million. And that blew the socks off everyone. So when they went back to the drawing board – you know, how do you upscale 40 times! – I think that needed a bit more thought and time [than they were given]. Again, I understand that the indication that this is now ‘our budget’, and the distance between that (in terms of time) and the actual production of the document was not helpful. The drafting went on for quite a bit of time, a couple of weeks into a couple of months, and then there was a gallop to the finish to get this thing out and get it public... and meet the deadline.

Although the funding committed was at the time the single greatest expenditure on an educational initiative in the State interviewees reflected the view that this was still ‘a conservative amount’ (Kelly) and that as a consequence Schools IT2000 was ‘under resourced’ (Knox).

The Final Report of the DES ICT Steering Group

The final report of the Steering Group (DES, 1997e) was furnished to the TMG on March 26th 1997. This report outlined the work of the Group and its view that a major national effort was necessary to ensure that all students have the skills they need for living and working in the Information Society and that all schools should have the potential to exploit the educational opportunities provided for by ICTs. It recognised the difficulty in producing reliable estimates of the costs involved and concluded that a partnership approach involving the DES, education partners, local communities, the private sector and other government

agencies was most appropriate for fulfilling the funding need. It was proposed that the Minister should initiate a national drive to integrate ICTs into first and second level education by launching a Millennium Project under the title *Schools IT2000* and that it should have the following specific objectives:

- a) Every school to be connected to the Internet before the end of the year 2000;
- b) The development of successful models for the integration of ICTs into first and second level education and the replication of these models into schools by the end of the year 2002;
- c) The active facilitation of a national partnership which would pursue the goal of ensuring that, within the shortest possible time span, all schools students have the access they need to ICTs to enable them to:
 - (i) Increase the efficiency and effectiveness of their learning in all areas of the curriculum through the appropriate use of the technology, and
 - (ii) Acquire the knowledge and skills necessary to fully participate in the emerging Information Society.

Regarding funding it was proposed that the Schools IT2000 project would involve an investment of £30million by the DES between 1997 and 2000. This £30million investment was seen as seed capital which would need to be supplemented by the private sector, community efforts and further government funding in the future. It was projected that the £30 million would be sufficient to support the replication of successful models of ICT integration into some schools only, with further funds required to continue this process in 2001 and 2002. It was estimated that an average annual investment of £8million would be required after the year 2000 to provide continuing support and to assist schools in meeting running costs and keeping equipment and skills up-to-date. It was outlined that the project would seek to avoid imposing ICTs or any particular approaches to the use of ICTs on schools. Schools would apply to become part of the project at different levels with flexibility in relation to participation and how allocated funding could be spent.

The proposal to 'seed' activity and to develop provision on an incremental basis can be attributed in the main to the philosophy and outlook of researcher/policy consultant Cyril Drury who in the context of the resources available and limited knowledge and experience of implementing technology within the school system strongly argued for this approach. As outlined by Drury:

we did need to seed activity, if we didn't have a huge amount of resource then rather than trying to spread it all over the place, which we would do in relation to say a computer in every school, but we also would... but in relation to projects, curriculum work, there you needed to focus resources, and that that would be a more efficient expenditure. Because I would have felt quite strongly that there was no point in wasting money either, and it was much better... here's an area that was open ended, we knew very little about it really in terms of what should be done, so it wasn't a question of rolling something off the shelf in terms of new curriculum implementation, so the way to do it was to seed activity in schools, and to document what had been done and to roll out successful activity.

It was proposed that at this stage the Schools IT2000 project should consist of two main elements: a scheme to provide every school with the infrastructure required to connect to the Internet and the three 'flagship' projects; SIP, Scoilnet and the TTC. A justification for supporting schools in connecting to the Internet was outlined on the basis of providing access to an information and communication resource, including a potential database of educational documents such as DES and NCCA publications, as well as the potential for in-service delivery via the web. A proposed phased funding of schools was outlined with priority given to those in greatest need. Schools would be invited to apply to join the scheme and would be given funding under certain conditions such as provision of a plan for the equipment's use, nomination of staff for training and contribution of funding locally (20% of the funding requested). It was suggested that three hundred schools should be funded initially with the remaining three thousand seven hundred schools becoming involved on a phased basis over the next three years. It was proposed that the amounts to be paid out to schools should be finalised by the DES ICT Policy Unit following further analysis and after consultation with the partners in education. The Steering Group recommended paying a basic grant to schools (£1,500) topped up with an additional amount per student (£5 per student, £10 in the case of disadvantaged schools).

In relation to SIP it was proposed that applications be invited from all schools interested in putting forward a proposal for participation in the project. The aim of the project outlined, as presented previously to the Steering Group, was to develop best models for integration at primary and post-primary levels with an emphasis on the dissemination of project outcomes. It was envisaged that the forty schools (increased from sixteen as previously suggested) selected by the CTE would work closely with the relevant Education Centre node and in particular the IT co-ordinator based there. The CTE would draw up a contract with each school selected to participate outlining conditions of involvement including

preparing a technology plan for the school, preparing regular progress reports, attending meetings to compare experiences and share ideas with other schools, preparing a final report and assisting in the training of other schools in the event of the model developed by the school being deemed suitable for replication. It was estimated that a sum of £2m would be required to cover the costs of the initial wave of forty projects over three years, with a further £3m required to replicate successful models in other schools before the end of the year 2000. It was also suggested that the SIP project should include particular provision for Special Needs with a designated additional fund of £1m being set aside for replication of successful models developed in this field.

Scoilnet was proposed as the second flagship project. Managed by the CTE its role would be to support ICT integration by providing information, curriculum resources, support and advice to schools, and by establishing a general database of educational documents. It was envisaged that it would strengthen links with European partners by providing Irish schools with a window into European education and vice versa. It was detailed that the ICT related materials contained on the site would include: a) information on the Schools IT2000 project including policy documents, application forms, sample school ICT plans, progress reports from participating schools, training resources; b) curriculum content prepared by the NCCA, NCVA, subject associations or individual schools; c) CTE advice sheets and guidelines for schools, examples listed were in relation to infrastructure options for schools, prices, discounts, software evaluation and licence costs, optimum use in the special needs context, connecting to and using the Internet and guarding against harmful materials. It was detailed that schools with specific queries would be able to email these to Scoilnet for a response and that two of the seven staff of the CTE would be allocated responsibility for managing Scoilnet on a full-time basis. The estimated budget of £2m would include provision for: i) the NCCA, NCVA and the subject associations in developing models showing how ICTs can support particular areas of the curriculum; ii) the DES, NCCA and NCVA in collating and publishing materials to the database of educational documents; and iii) the work of groups such as the CESI in respect of any contribution they might wish to make to the web site or the project more generally.

The Teacher ICT Training Project (previously known as the Teacher Training Continuum) was outlined as documented previously by the researchers in their presentations to the

Steering Group. As such the establishment of a forum aimed at encouraging a co-ordinated response to teacher training needs from the third level sector, the carrying out of a needs analysis, and the development of progressive training models were outlined as constituent elements of this aspect of the Schools IT2000 project. It was proposed that each of the ten Education Centres involved in the project would provide basic training to teachers and that ScoilNet would be utilised for the flexible delivery of basic training where appropriate. It was recognised that most of the ICT training provided to teachers to date fell within the category of awareness/specialised skills and that the DES Policy Unit and the CTE would have a role in working with the DES's ICDU to develop courses in line with the national ICT training model. It was specified that the need for pedagogical training aimed at developing teachers experience and confidence in the learning environment would need to be addressed and that the Project Co-ordinator should work with the teacher associations and the Colleges of Education in delivering pedagogical training. The classroom based approach was again emphasised as the most effective means of delivery, involving teacher educators in support of classroom activities, and that the project would aim to deliver a pedagogical training programme with University/Training College accreditation to teachers in each Schools IT2000 school. The costs involved were estimated at £7m based on the assumption that teachers would attend training outside of normal school hours so as to minimise substitution costs.

The structures proposed were as outlined in previous presentations and documentation circulated by the researchers to the Steering Group:

- (i) a National ICT Policy Unit in the DES headed up by Principal Officer/Assistant Chief Inspector and two other staff. This Unit was to be responsible for policy formulation and co-ordination of all ICT related initiatives, including co-ordinating and supporting inputs from external partners and co-ordinating involvement in EU and other international projects. It was proposed that the Units' brief would extend beyond the use of ICTs in schools to cover all educational issues including those in relation to third-level, adult education and national education and training systems to develop models for lifelong learning in response to the requirements of the emerging Information Society.
- (ii) A Centre for Technology in Education (CTE) external to the DES to manage the implementation of the Schools IT2000 project and relevant related initiatives and to provide advice and support directly to schools. It was proposed that the Centre would

have seven full-time staff, comprising mainly educationalists with appropriate ICT experience. Apart from a Director, the Centre would have three staff responsible for administration and research, and three further staff, one responsible for each of the three flagship projects. The Centre would operate under the direction of a Steering Committee chaired by the Director of the DES ICT Policy Unit and with representation from the partners in education. The position of this proposed body with respect to the DES (i.e. either internal or external) was a topic of discussion at the Steering Group and reflecting the conservatism regarding expenditure documented previously there were some concerns regarding the resources associated with funding a new body such as this. Drury was strongly of the view that this Unit should be separate to the Department so as to facilitate the strategic planning dimension of its work, as distinct from its management function. The view was also expressed that positioning within rather than outside the DES would afford the greater opportunity to influence policy.

(iii) Project nodes based in each of the ten Education Centres which were operating on a full-time basis at the time. It was proposed that a full-time IT Co-ordinator (generally a seconded teacher with a proven track record in ICTs) would be appointed to each node with responsibility for providing training, advice and support on ICTs to all schools within a defined area but with particular responsibility for schools participating in the Schools IT2000 project. There was an expectation that each node would work in partnership with a third-level institution, and other parties wishing to contribute at local level, to meeting the national goals for the integration of ICTs into schools. It was noted that consideration could be given to increasing the number of nodes beyond ten, or to appointing a second co-ordinator to larger nodes over the course of the project.

The report concluded with the proposition that the DES Policy Unit and the CTE be put in place as soon as possible so that the preparatory work for implementation could begin. It was envisaged that the Scoilnet project and the provision of Internet to schools could commence straight away, with the Teacher ICT Training Project beginning in September 1997. Schools would be invited to submit proposals for involvement in the SIP project before the end of 1997, with the selection of school to participate being made early in 1998.

Schools IT2000: The Initial Launch

The Schools IT2000 project was launched for the first time by the then Minister for Education Niamh Bhreathnach in a Fine Gael led government on the 9th April 1997. The press release circulated by the Minister at the time focused on the project targets and highlighted the three initiatives (Teacher Training, ScoilNet and SIP) in addition to the provision of infrastructure to schools so as to allow them achieve worthwhile educational benefits. Significantly the structures which would facilitate these initiatives were not detailed and it is likely that ongoing background deliberations prevented detailing of the support structures in the Ministers launch. Two further versions of the report submitted to the TMG were drafted at this time (in April and in May 1997) and a comparison of these reports reveals a number of interesting developments regarding the proposed role of the CTE, by this stage known as the National Centre for Technology in Education (NCTE). In the May draft the NCTE was charged with setting national policy (rather than merely implementation) and all references to the ICTs Policy Unit were removed. In this version the responsibilities previously attributed to the Policy Unit were now attributed to a member of the Department's Inspectorate who would 'provide focused handling of educational ICT issues at Departmental level by disseminating information and ensuring that all ICT related activity in the Department is integrated into the policy framework to be developed by the NCTE' (DES, 1997e, May draft/p.33). The work of the NCTE was to be guided by an advisory committee with representation from the Department of Education and the partners in education. In addition to the elimination of the proposed Policy Unit a number of other previous commitments were less prominent in the latter draft. With regard to SIP it was outlined that a third level Academic Advisor could exist rather than being a significant feature as was the case previously. In relation to the targets outlined the role of Schools IT2000 was 'to develop a comprehensive national policy on the role of ICTs in Irish schools' (DES, 1997e, May draft/p.7) with an emphasis on providing access to ICTs for students and teachers, as well as providing advice, resources and support for classroom integration. The April draft documented a stated aspiration regarding policy implementation and whilst this was still inherent in the project structures the removal of 'implementation' as a stated target from the May version was nonetheless interesting. As the ICT Policy Unit was no longer part of the implementation structures the immediacy afforded to appointments to the Unit in the April version was instead afforded to the provision of appointments to the NCTE and the formation of an advisory group within the

DES. Overall it is evident that at this stage the exact make-up of the implementation structures was still subject to deliberation and debate amongst the personnel within the DES.

Schools IT2000: The Re-Launch

Following a general election in June 1997 in which a Fianna Fail led government was elected to government, Schools IT2000 was launched for a second time on the 28th November 1997 at St. Aidan's Christian Brothers School, in Collins Avenue, Dublin 9 by the incoming Minister for Education Michael Martin and Taoiseach Bertie Ahern. The core elements of the policy as developed and outlined previously were still very much in evidence although the titles attributed to some constituent elements and their position within the structure of the overall project had changed in some cases. The policy was presented in a nine chapter document spanning forty pages accompanied by a summary of seven pages. Classroom resources and infrastructure, teacher skills development and support, and policy and research were identified as the three target areas. In addition to the objectives and implementation strategies, partnership was flagged as a key objective of Schools IT2000; it was envisaged that the national partnership would involve schools, parents, local communities, third-level colleges as well as public and private sector organisations, with a view towards meeting the project's objectives. It was predicted that the Government's investment (now increased to £40m) would be supplemented through the efforts of the partners and the investment of £10m by Telecom Eireann over the coming three years (bringing the total budget available to £50m) was cited as an example of the significance of the partnership approach.

The objectives outlined reflected the emphasis on infrastructure that had been evident in the Steering Group Report and provided some indication of the intended outcomes from this provision: 'Schools IT2000's core objective is to put in place a permanent infrastructure which will ensure that pupils in every school have the opportunity to achieve computer literacy and to equip themselves for participation in the information society.' The project also set out to ensure that 'support is given to teachers to develop and renew professional skills, which will enable them to utilise ICTs as part of the learning environment of the school' (DES, 1997a, Summary/p.2). Detailing the rationale for implementing ICTs within schools on the basis of social, economic, pedagogic and catalytic grounds, the integration of

ICTs into classrooms was seen as an important goal, with ICT integration correlating with wider educational aims, although there was no attention in the policy document to integration in the context of the curriculum, and the various curriculum subject areas.

The strategies and related implementation structures detailed the provision of a technology infrastructure by means of the Technology Integration Initiative (TII), the development of a skills infrastructure by means of the Teaching Skills Initiative (TSI) and the provision of support for schools and teachers by means of the Schools Support Initiative (SSI) encompassing the Scoilnet and SIP projects. SIP was no longer a 'flagship' element of the programme and as reflected in the initiatives outlined above the emphasis was now on the provision of equipment and teacher training on a system wide basis. The aspiration to 'seed activity' and to establish good practice prior to replication was no longer in evidence as policy was now focused on deliverables relating to every school, teacher and student within the system from the very outset. Drury who had strongly argued for an incremental approach acknowledged that there was some concern and disagreement regarding this within the DES on the basis of equity and Kelly, the DES Inspector charged with the 'rewrite' of the Steering Group proposals outlined his personal viewpoint in this regard which he brought to bear on Departmental provisions:

I look at myself as socialist... and I don't feel like disadvantaging an area... I was thinking of the tiny schools out in the country , are they going to be disadvantaged even more?... what about the schools out in the Aran Islands... what about schools that just don't have the possibility of linking up like this... and I felt very strongly that anything the Department did must include every school.

The significance of the 'rewrite' and the related repositioning of SIP was reflected upon by Galvin as detracting from the original intentions and philosophy of the Steering Group stating that initially 'the pilot projects are the spearhead, they're the leading edge... [but] decisions were made within the Department to change the structure and to focus instead on teacher education and kit... what we call the IT2000 framework document was in a large part his reworking of the original intentions of that Working Group.' Galvin went on to outline how in his view this 'weakened' the policy proposals and that the earlier document authored by Cyril Drury in the context of the Steering Group deliberations was 'better than the one that was actually published subsequently.' This also illustrates that whilst the Steering Group members played a role in shaping policy via their proposals the nexus of control was firmly located with key figures within the DES who has the responsibility and

authority for the final version of policy proposals. This was reflected on by Knox who saw that in translating the document authored by Drury into what became Schools IT2000 ‘the guys in the Department kept a very strong hand.’

Significantly expected outcomes in terms of quantifiable targets were outlined for each of the policy initiatives (DES, 1997a). The stated aim of the TII was to ensure that there were at least 60,000 multimedia computers in Irish schools by the end of the year 2001. Implementation was to take place in two strands, with strand one recognising ‘the need to make rapid progress’ by providing at least one multimedia computer with Internet access in each school before the end of 1999. The stated purposes of this strand were to: support technology planning at school level by providing an opportunity for schools without multimedia systems to explore the potential of technology; and, to enable schools not already on the Internet to participate in the project by providing them with an online link to the NCTE and to many other educational sites on the web. Strand two outlined how the NCTE would develop mechanisms to support schools in building up their ICT equipment infrastructure during the course of the project with the objective of achieving an installed base of 60,000 multimedia computers by the end of 2001. Given the rate of technological developments, the NCTE would commission a study to consider current and future technology infrastructure options, with the ongoing implementation of the TII guided by this study.

The TSI aimed to provide skills development to at least 20,000 teachers nationally, and at least one teacher per school. As outlined previously a forum involving representation from the DES, the third level sector, Education Centres, managerial authorities, teacher unions and parents would be set up to advise on the planning and implementation of the initiative. The programme of training set out to target ‘ICT awareness training’ (possibly ECDL), use in a curriculum context, and ‘pedagogical skills development’ although the policy document contained little by way of detail in relation to the exact nature of each category of provision. The teacher associations and Colleges/Schools of Education were identified as having a role in the development of pedagogical skills, by initially supporting the teachers involved in the forty Schools Integration Project pilot schools, but with a view towards developing models of school based training which could be implemented in other schools. It was envisaged that professional development programmes would be delivered primarily

through the Education Centres, with some courses delivered by the resident IT Advisor. The aspiration for a system 'needs analysis' as considered by the Steering Group was no longer reflected in the proposals outlined.

Scoilnet and the Schools Integration Project (SIP) were now incorporated under the SSI with the stated aim of providing continuing support and advice in relation to the use of ICTs in the classroom, and the facilitation of the integration of ICTs into the curriculum. It was outlined how every school would be supported in producing a technology plan to reflect its broader educational goals, and that schools should have access to technical support. However no definite strategy for technical support was outlined, the policy document instead promising that 'appropriate mechanisms will be put in place to ensure that such support is provided under Schools IT2000' (DES, 1997a, Ch7/p.8). Scoilnet itself would provide some technical support in the form of advice sheets and guidelines for schools. It would also support the development and dissemination of curriculum materials, facilitate communication by means of online databases, secure email and online discussion groups, as well as providing in-service support materials and promoting international links. SIP would foster experimentation on a pilot basis with a view towards identifying and disseminating models of good practice. For SIP outcomes were specified at school, Education Centre and third-level, focusing on the identification of practice for dissemination to other schools. At school level the outcomes were: the development of curriculum/content guidelines to support ICT integration in co-operation with the NCCA and other agencies; the identification of physical resource issues including hardware and software management and maintenance; the identification of staff development needs - a model for all staff including subject teachers and the principal; the identification of school support issues including the role of the IT co-ordinator and time requirements; and, the identification of whole school strategies to facilitate ICT adoption into the school plan. The SIP outcomes related to Education Centres were: the development of training resources which would be available for adoption for other regions; the identification of regional support and resourcing issues; the exploration of administrative issues in relation to information management at local, regional and national levels; and, the identification of community involvement strategies to encourage closer links between schools, commercial entities and community groups including the extension of ICT learning opportunities to the wider community. Related to third-level, the outcomes were to put in place learning

partnerships between schools, Education Centres and third-level institutions; to make research available on ICT practice in schools, and to develop pedagogical expertise with regard to ICTs in schools. The relatively developed outcomes for SIP at these various levels may be a reflection of the more significant position afforded to it initially.

The structures outlined saw a reinstating of the DES ICT Policy Unit in addition to the NCTE and the network of IT-Advisors in each of the ten full-time Education Centres. In addition to implementation of Schools IT2000 the NCTE would be responsible for developing policy proposals (subject to consideration and approval by the Minister for Education) as well as providing policy advice to the DES. A National Policy Advisory and Development Committee (NPADC), with representation from the partners in education and the social partners was also to be established. The Educational ICT's Co-ordination Unit in the DES was to provide the focal point for the Department's involvement in all educational ICT matters. The functions outlined were to: provide focused handling of educational ICT issues at Department level; act as a linkage between the Department and the NCTE and provide advice and support to the Minister and staff of the Department; provide any necessary DES input to national and international fora and discussions on educational ICT issues; evaluate proposals made directly to the DES by other parties; and, respond to parliamentary questions, letters and telephone queries received on educational ICTs. No specific details regarding staffing were included in the policy document.

The NCTE was to have an extensive brief being responsible not only for the implementation of Schools IT2000 but also charged with an advisory brief to cover all educational ICT issues including those relating to third-level and further/adult education, with particular reference to developing models of lifelong learning in response to the information society. A total of twelve Terms of Reference were outlined reflecting a multiplicity of roles incorporating policy development and implementation, Government advisory, as well as national and international (EU level) communications and networking. Initially six staff were to be recruited: a Director; four co-ordinators, one each for the TSI, SIP, ScoilNet, and the TII; and, a receptionist/secretary. It was envisaged that further staff would be recruited as the project gathered pace, including educationalists (mainly seconded teachers), IT staff and administrators. It was proposed that NITEC would merge with the NCTE from its date of establishment although no reference to provisions or arrangements

for the NITEC staff in the context of the NCTE was made in the Schools IT2000 document. The NCTE was to be managed by a Board of Management appointed by the Minister for Education and Science and assisted in its work by the to-be established NPADC.

The Education Centres were outlined as having a key role to play in supporting the work of the NCTE by providing leadership, training and support at regional level, and by providing regular feedback on progress and issues arising. A full-time IT Advisor appointed to ten Education Centres was to be charged with providing training, advice and support on ICTs to all schools within a defined area. Each of these Education Centres was to work in partnership with a third-level college and other interested parties, such as the library service.

The policy document outlined a number of guiding principles underlying Schools IT2000. These included the availability of appropriate technology linked to the provision of appropriate professional development and support. The emphasis on integration in every school and right across the curriculum was also inherent in the guiding principles outlined: 'ICTs need to be integrated into first and second-level curricula and teachers need ready access to high quality supporting resource materials, including software' and 'there is no one formula for integrating technology into the classroom and the school curriculum. The nature and level of technology use in any school will depend on the school's educational priorities' (DES, 1997a, Ch5/p.2). The final policy document outlined more ambitious outcomes than had been the case initially, with the aspirations outlined focusing on effecting practice in every school. This marked a significant extension of the scope of the Schools IT2000 project as initially proposed by the Steering Group Committee, and as reflected in the initial version of the policy launched prior to the change of Government. In the initial versions the expectations regarding use within the confines of the curriculum was limited to those forty schools participating in the SIP project, with further replication of successful outcomes in other schools as part of a subsequent phase of the project.

However the desire to integrate technology across the curriculum and in every school was now flagged upfront as a priority, albeit in the context of economic development: 'The need to integrate technology and learning right across the curriculum is a major national challenge which must be met in the interests of Ireland's future economic well being'

(DES, 1997a, General Introduction/p.1). Given the extension of scope within a limited timeframe for additional planning and within the initial structures and expenditure, the emphasis on integration might be best understood as aspiration rather than as a planned curricular innovation encompassing the thinking, curricular revisions and clarity of implementation necessary for it to take place, as had been reflected in the early documentation considered by the Steering Group. Whilst the aspirations regarding integration might be viewed as a more significant element of top down influence that that been advocated previously, bottom up elements served as recognition that the details regarding implementation were as yet to be worked out, the document outlining that: ‘An experimental approach (piloting) is needed to identify the best models for technology adoption in Irish schools’ and that; ‘Local support and peer networking among teachers are vital to successful implementation at classroom level’ (DES, 1997a, Ch5/p.3).

A number of interviewees (Drury, Hallissey, Kelly, Knox, McLaughlin & O’Conluain) were keen to distinguish Schools IT2000 as a policy framework in the context of which a full statement of policy might develop and evolve. In the words of O’Conluain: ‘Schools IT2000 was not a statement of policy... it was a policy framework. And there’s a very significant difference... so really it set out the landscapes within which policy might evolve.’ Knox in acknowledging that what set out to be a framework de facto became something more significant drew particular attention to the limitations associated with this:

The document that was produced was really only a skeleton, it wasn’t a policy document at all. It was a preparatory step towards having a policy document. That was one of the big downfalls... it was a disadvantage... the document that was supposed to be framework... that’s all it was, it was framework. But it wasn’t a policy statement... it didn’t contain any serious statements of policy from the Department in relation to what ICT might do.

However O’Conluain strongly rejected that it was presented as anything other than a framework drawing attention to the necessity for a bottom up rather than top down collaborative approach to develop the associated detail:

We very deliberately titled that document a policy framework and at every opportunity certainly from my perspective as the person who coined that phrase... emphasised that it was precisely that... a policy framework...and part of the reason for that is, a recommendation as I mentioned earlier that policy in relation to ICT in education would have to be built from the ground up... it wasn’t something that could be in a sense... conceived in Marlborough street, packaged and presented for implementation. It was something that required hands on operation and collaboration within the teaching profession... and between the teaching profession and private industry and policy makers in the Department.

Summary and Conclusion

This chapter has detailed the development of Schools IT2000 arising from the work of the DES ICT Steering Group over the period January to March 1997. This policy development process was characterised by a tight timeframe reflective of the sense of urgency which was prominent at this time (the factors influencing and driving this sense of urgency will be addressed in the next chapter). Issues relating to the availability of funding and hence the scope of the initiative coloured the policy development stage with significant funding only committed at a stage when most of the deliberations regarding potential policy directions had taken place. The work of the Steering Group was underpinned by an understanding of the complexity of its undertaking and in this context advocated, amongst other considerations, the appropriateness of an incremental approach, the desirability of a training needs analysis for teachers and the need for curricular revisions (implying a key role for the NCCA) to support implementation at the school level. This work drew on certain key documents such as the *White Paper on Education* (Department of Education, 1995), the *OECD Review of the Minerva Project* (OECD, 1994) and the *Draft Report of the ITIP* (Department of Education, 1996) to underpin and advance the rationale for the proposed policy and related implementation structures. Whilst the key elements identified in terms of policy and structures remained relatively constant over the developmental process (aside from the changes in associated terminology or nomenclature) their positioning within the ICT policy eco-system was the subject of some adjustment at the behest of key figures within the DES who had the responsibility and authority for finalising policy in this area. Most significantly this led to a policy based on a system wide rather than on a phased or gradual implementation accompanied by an emphasis on the provision of infrastructure and basic teacher skills rather than on the establishment and replication of worthwhile practice from the ground up. This, in effect, may be viewed as enacting an approach to educational policy somewhat at odds with the complexity of understanding evident in the work of the Steering Group (in turn informed by the Department of Education Submission to the Information Society Steering Committee (Department of Education, 1996b)). The version of change reflected in this approach sees ICT as a technical rather than as a curricular innovation in which change is perceived as straightforward and simplistic rather than as multifaceted and complex. This also resonates with an approach to policy and policy implementation consistent with an innovation-focused rather than a social practice-focused discourse. This can be attributed to the role of the DES in mediating the political imperative

as the philosophy and values of some key policy actors were tempered by the conservative progressivism of the DES.

Chapter 6 Findings 2: Factors influencing DES policy in relation to ICTs in post-primary education

Introduction

This chapter addresses the factors perceived by interviewees as influencing DES policy in relation to ICTs in post-primary education. It is structured around the main themes arising from the data vis-à-vis the perceived external influence, the primacy of the political imperative and the influence of a number of significant contexts as detailed by interviewees. The following sections present the researchers' interpretation of the influencing factors based on the analysis of the interview data. The elaboration and development of this interpretation is supported by relevant interview excerpts.

Section 1: The External Influences

Interviewees saw Schools IT2000 as very much 'an industry led initiative' (Galvin) which with a number of political factors including the perception of a 'crisis' in Irish schools and the presence of an enthusiastic Minister for Education/Ministerial Advisor combined to drive policy development and implementation. The impetus from industry was seen to derive from the desire by some in this sector to have more ICT literate students entering the workforce. As a consequence various representatives of industry were eager to support technology in learning but the DES found itself in the situation of not having any mechanism to capitalise on this willingness. Knox identified very specific sources of influence as those multi-national companies based in industrialised parts of Ireland who provided significant employment whilst also acknowledging that the pressure did not originate from the school based community:

There wouldn't have been a burdening pressure from principals in schools or teachers in schools to start using computers... The energy for the NCTE and the Schools IT2000 platform was born out of the development of places like Intel and IBM facility out in Blanchardstown, and we'll say the Hewlett-Packard out in Leixlip and if you look at what was happening in Galway with Compaq... there was enormous emphasis on ICT in the country.

Kelly also acknowledged the influence of these multinationals referring to them as 'major drivers' with whom the DES had dealings in the context of the origins of Schools IT2000. Turpin outlined how the status of these companies with respect to employment and

economic development earned them a hearing for their views in relation to technology in education:

you had companies like Intel recruiting like crazy, banging the drums about the importance of IT in the classroom, the fact that it could be an enabler for a better type of education and so forth... and there was obviously... a body of opinion which counteracted that... but because Microsoft were renowned, HP were big, IBM were building up... there was that sense, hey you know... they are here, they're telling us this is good, and maybe they will even help us fund some of it and they'll go for it, you also had at the same time.. people like Intel saying we want to train loads of teachers to be IT literate... to be able to use this as an appropriate tool for learning and teaching...

In his view there was, at this juncture, a lot of interaction between the educational and industrial sectors due to concern on the industry side regarding the flow and provision of appropriately skilled and qualified employees and a general view on the part of this sector regarding the need for technology in schools. He outlined how from the Intel perspective 'we were raising our voices to some degree...spending a lot of money in community relations, educational issues, the do good stuff, but trying to influence policy...we found ourselves sitting on various committees with policy makers driving things...' This was echoed by O'Conluain who in the context of several interplaying factors including the business/industry influence identified the emergence of what he described as 'a political view' that 'Ireland Inc needed to be up there along with other countries in terms of developing a national ICT skills base... not just for students in schools but for society in general.' Amongst other interviewees Morrissey and Marshall strongly identified the influence of industry with Marshall holding the view that intervention from those in industry was necessary to drive an agenda that those in education, including the DES, were unable to address for reasons of knowledge, interest and desire. However Fitzpatrick representing the NCCA saw the industrial influence as focusing the educational component of the debate on the needs of third level and the supply of well qualified graduates, a view confirmed by Sweetman from the IBEC perspective over the course of his interview detailing that companies see the supply of highly skilled graduates as 'a key competitive advantage' and for that reason they 'look at the whole sphere of educational policy.' Fitzpatrick saw the industrial influence as making 'many assumptions about the limited need for deliberation on curriculum and assessment issues that are not necessarily the right assumptions to make.' In similar vein Hallissey saw the industrial influence as tending to simplify and overlook deeper educational considerations such as the meaning of ICT embeddedness or integration and related pedagogical implications.

In the lead in to Schools IT200, what might be described as very public pressure was applied to the DES by a number of publications which addressed the emerging ‘information society’. Particularly significant was the Information Society Commission report which ranked Ireland at 23rd in the world in terms of readiness for the information society. This was described by a number of interviewees as striking a chord within the Department and as providing pressure that was more difficult to ignore than the bottom up pressure applied by a lobby group from within the education sector in the form of the CESI. Whilst the CESI advanced the case for technology over the previous twenty years, there was, at this time, no significant interest from the wider education sector. As described by Galvin:

on the lead in you’d have not had a lot of interest on the academic side.... There were no clearly defined clarion calls coming from any of our institutions about the great advantages technology could actually bring to the teaching and learning situation...and unfortunately, we’re always seen as an ‘extra leg’ in the debate since then, because all of the leadership was coming from the political and the industrial side of that point, not from us...

As outlined by Drury the Forfas body which was a pre-runner to the first Information Society Commission (ISC) requested a response from each Government Department in relation to the potential role of technology within its field of responsibility. Drury was asked by McLaughlin who was then the DES’s head of financial services/IT (and hence used to dealing with computers in a work context) to assist in writing the Department’s response. In Drury’s view Forfas/ISC were applying pressure directly to the DES and in a sense this pressure was internal to the public service whereas others pressures such as that applied by the CESI were more ‘distant’, of lower profile and hence less significant but this was ‘pressure being applied from the other side of the Department, not from the bottom, but from the top, or from the side, they might prefer.... to say what are you doing in relation to IT in schools.’ There was also a sense as expressed by Kelly that the issue of technology in schools was being aired as a political platform on the part of the opposition Government party, and that this public pressure was more difficult to ignore. O’Cannain offered the following perspective which sums up many of the viewpoints offered:

it was really a situation in which it [the DES] had been embarrassed into doing something by an outside body and I suppose for me it was an interesting example that the pressure on education was coming from outside education, outside the school system, and it was this shift in government thinking and national trend looking at education as a vehicle for socio-economic development and with the need then to incorporate ICTs... for social economic purposes...the drive came not from the education side of the Department but from the IT technical side...

McLaughlin recalled being influenced by his involvement in an international association of professionals involved in computing for administrative purposes who met at a conference annually: ‘references were being made to it at some of the international events I was attending to the extent to which IT was being used in education in other countries, being integrated.’ McLaughlin also recounted how around this time the IT Unit of the DES often received phone calls from schools who were interested in installing computer networks or using computers for educational purposes generally to the extent that whilst it was outside his role or remit he took an active interest and prepared a submission for consideration by the Secretary General of the DES and the Minister of the time who in his own view ‘took it seriously.’ This initial submission formed the basis for the subsequent response to the request from the Information Society Commission. It is given these origins in the IT or finance operations side of the DES that Schools IT2000 was referred to by Wall as an ‘IT gig.’

The absence of input from the CESI may be seen as illustrative of a general non-adherence to a partnership approach in the context of the development of Schools IT2000 but must also be understood in the context of political expedience where the desire to have things happening quickly was the most dominant concern. Oldham outlined how the close relationship CESI had enjoyed previously with some senior Inspectors had dissipated by the time those now in positions of influence began to enact the policy process although a number of interviewees including Galvin, Drury, Guilmartin, O’Cannain, Morrissey & McLaughlin commented on the significance of the CESI over time and highlighted the role it played in networking and supporting teachers with an interest in this area, almost akin to a subject association. O’Cannain drew particular attention to the non-role afforded to this group at the time when the official attitude to technology changed stating ‘when the time was right... it seemed to be almost like, you know... you don’t consult the people you know are the experts...’ Although there was no direct consultation with the CESI as a body prior to the launch of Schools IT2000 the CESI had an indirect influence through long standing member Cyril Drury and in recognition of the role it had played to-date CESI representatives were granted a meeting with Minister Michael Martin to discuss the Schools IT2000 document and potential roles for the CESI not long after its launch (Oldham).

Generally the partnership process and more specifically the partners were not viewed as influencing the policy both in terms of process and outcome, as they were not afforded the opportunity to do so at the initial stages other than, according to Drury, to input a written submission. Recognising that the issue of consultation did cause some friction at the time, Drury went on to outline how the lack of adherence to the partnership process may have been a consequence of the fact that the initiative was not perceived as high stakes in terms of funding from the beginning, and that if the extent of funding which was eventually committed was set out from the outset the nature and extent of consultation may have been different. The lack of attention here was recognised and commented upon by a number of interviewees including Galvin who suggested that based on previous recent experiences consultation and consultative processes were not in favour within the DES at the time and O’Conluain who identified the time factor involved in engaging with such a process:

if you're in the business of quick-starting a national initiative and you understand the nature of representation in Irish education, you'd grow a beard to your knees before you arrive at the point you're talking about, so in a sense it's like starting a new agency, you get going... get doing... and... you can tend to those things at a later stage, it's a question of priority.

This provides an insight into the thinking of DES personnel at the time which was subsequently reflected in the setting up of the NPADC as a representative forum for the partners in education, post policy and post policy implementation. Reflecting the views of a number of interviewees whose constituencies were represented at this forum Galvin outlined how it became ‘a kind of partnership sop’ and:

a kind of a meeting ground for all of the partnership interests that were or in one sense or another perceived themselves as slighted or cut-out with regard to NCTE itself. So it became a talking shop for people who would otherwise perhaps – in the Department’s view at least – have gotten in the way of making ‘real progress’. So it was... it was used as a sort of holding pen for ‘trouble makers’ in a lot of ways.

How the NPADC developed was very much in contrast to the expectations as understood initially by some members who saw membership of this committee as affording them a significant role with respect to influencing the Minister for Education, something which on reflection by Guilmartin, drawing on his experience of how it developed, was not the case. Leydon addressed the issue of partnership at length over the course of her interview and was strongly of the view that this had not been adhered too at any stage of the process affecting implementation due the failure to capitalise on available expertise and potential teacher support. In respect of NPADC Leydon outlined the view that it constituted

consultation after the event had happened and that whilst it was necessary to be represented, participation was of no benefit to the organisations represented:

It was meant to be contribute to policy but it never got to that because the policy was done. That point was made repeatedly. How can you contribute to policy when the policy is done and dusted and issued in a very nice brochure? You can't do that... and also, we weren't even... because there was nobody, there was no board for the NCTE with a partnership model... you weren't kept involved as to what was actually happening, and you had no input into the decision making structure. So as I said, there was no sense that it had any real role bar a PR exercise in partnership. Quite frankly. And I could say that for everybody around that table, there was nobody under any illusion that that's what it was... I mean... you had to be there because you had to have your organisation present, but it was a total waste of time, frankly.

Leydon saw the possibility of having a meaningful follow on committee from NPADC as an opportunity to capitalise on the benefits she saw as accruing from such a process and described the fact that this did not happen as 'a complete refusal to engage in the partnership process which is supposed to be one of the key strengths of our education system.' Marshall commented on 'union buy-in' which may be understood as one of the potential benefits referred to by Leydon although over the course of his interview O'Conluain saw the teacher unions and the industrial relations context as a difficult backdrop for the enactment of such policy, with union and member interests dominating their agenda. In the words of McLaughlin: 'they [the teacher unions] would always have been looking for what they could get for their members.'

Summary

The initial drive to implement technology within education was perceived to have been borne out of pressure from outside the education community with the industrial influence cited as being particularly significant. A number of European initiatives and the Information Society Commission were also seen as influential at a time of greater openness within the DES. Ireland's poor ranking in terms of readiness for the information age struck a chord with DES personnel where internally the drive for technology originated from the technical side of the Department. The culmination of external influences advanced an economic rather than an educational rationale for technology as external influences drove the policy agenda. The absence of an educational input is illustrated by the non-role afforded to the Computer Education Society of Ireland (CESI) during the key policy development stage. This society was prominent in lobbying for technology in schools during times of limited interest and resources but as a body was not consulted when the

‘official’ attitude to technology had changed. This is reflective of a general non adherence to a partnership based approach as political expedience was the key. The lack of commitment to partnership was perceived by some interviewees as having a negative effect on the resultant policy and implementation.

Section 2: The Political Imperative

Interviewees recognised the political dimension of ICT policy for schools and in the views of many interviewees it was driven by political expedience rather than by educational underpinnings although Mulkeen advanced that generally educational policy is more politically driven than research based. Almost all interviewees recognised the influence of the Minister for Education at the time of the re-launch Michael Martin in driving the ICT policy agenda. Also identified as significant was Ministerial advisor Peter McDonagh who in the view of a number of interviewees saw the potential of technology in education and recognised how impacting on this area of education had the potential to form a Ministerial legacy, as reported by one interviewee, of equivalent impact to the introduction of free education. Hence there was a desire on the part of the Minister and his advisors in response to the external pressures being applied to the DES as outlined previously, to introduce technology into schools and to do so quickly. In the words of Kelly ‘it was seen by the politicians at the time that we needed to be seen to be doing something.’ Galvin echoed many interviewees in recognising the significance of Martin and his decision to prioritise technology backed up by his advisors and McDonagh in particular. Although essentially an industry led initiative and in his view ‘the right political kind of decision to make’ Galvin recognised that the decision ‘to run with’ Schools IT2000 was ‘still a brave enough one’ given the demands involved in terms of funding. Galvin also recognised the contribution of McDonagh whom he saw as ‘playing the politics of it’ by helping to create the notion of a crisis in schools which needed to be addressed based on Ireland poor performance on ‘a mythical scale that no-one’s ever quite figured out’ in a previously unknown ranking exercise. This may be interpreted as providing a rationale for this essentially top-down externally driven policy initiative, that as a consequence Minister Martin had no other choice but to do something and to do so quickly in order to preserve Irelands status within the developed world. As outlined by Galvin this manifest itself by ‘Micheál Martin standing up in public and looking suitably concerned and dragging us reluctantly into the twentieth century’ in terms of schools ICT.

Whilst the nexus of Michael Martin and Peter McDonagh were credited by the majority of interviewees as driving the ICT agenda via Schools IT2000 a number of interviewees including Drury, Guilmartin, Kelly, McLaughlin, O’Cannain and O’Broin also recognised the role played by Martins predecessor Minister Niamh Bhreathnach in initiating interest in this area and establishing the Steering Group whose work provided the basis for the policy framework prioritised by Martin and McDonagh. In this regard much of the background work in respect of Schools IT2000 was in place before Martin assumed his Ministerial position and raised the ICT issue to prominence with the input of his Advisor McDonagh. Interviewees also recognised the interest in this area pre-Martin by the then Taoiseach John Bruton and Secretary General of the Department of Education Don Thornhill.

Generally interviewees recognised the significance of a supportive Minister in respect of any policy implementation and in this case Minister Michael Martin actively drove policy in respect of ICT. Politically the external factors at play and the perception that there was a crisis in schools based on Irelands reported standing in respect of readiness for the information age gave Martin and his advisors a rationale for advancing this agenda. Guilmartin drew attention to the significance placed upon public relations by Minister Martin and his team as reflected by the media launch and the ‘glossy’ policy publications, attributed by Galvin to the influence of McDonagh and his recognition of the significance of appearance. Guilmartin went on to recognise now this ‘media element’ created a sense of excitement amongst teachers based on their expectations around the funding to be committed and their perceptions of impact on the education system as well as the sense of a progressive Government. Initially the level of funding available was unclear but as more significant sums were committed the political will to drive this agenda also increased. Knox also recognised the public relations agenda seeing it as a good new story to put computers in schools. He outlined how Martin was ‘a dynamic Minister with money to spend, wanted to see it spent, wanted to have a good new story every week. If I’ll be frank about it, it’s a good news story to put computers in the schools. It’s a good news story for politicians.’

The particular interest of the Minister and the desire to drive policy and policy implementation quickly was reflected in the hands-on approach adopted by him to overseeing Schools IT2000. This was addressed by both O’Conluain in the context of his dealings with Martin within the DES and Knox in the context of his work with the NCTE.

O'Conluain drew particular attention to the significance of the level of funding involved and the desire to have it spend it a visible way, stating:

In my experience as a senior public servant, it's not very often that you engage so regularly with a minister on a policy issue... where the minister is showing quite clearly that he or she wishes to be hands-on in relation to the development of that policy and its implementation. But I recall weekly meetings with Michael Martin. He was very keen for all sorts of reasons. Also ministers, it doesn't matter what portfolio they are in charge of, can appear to be a lot more active and can in fact be a lot more active when there's large... there was money here, and he was anxious to spend it and spend it in a visible way and in a way that added value as he saw it.

Echoing this Knox outlined how, based on his work with the NCTE:

We were driven very hard by the Minister, working very closely and reported directly almost to him, maybe through Seamus [McLaughlin] and maybe through Frank [Kelly]... maybe through John Dennehy... but were very close to him and met him personally to report on how we were getting on.

Drury alluded to the fact that whilst such a level of interest was 'great in terms of driving it forward' it may have impacted on the work of the NCTE more generally as such a level of 'micromanagement' may have been an impediment to more strategic efforts.

Interviewees also reflected on the impact of the change in Minister for Education when Michael Martin moved on from this position to be replaced by Dr. Michael Woods in 2001. Hallissey, O'Conluain and Morrissey all reflected how generally any incoming Minister has little interest in the priorities of his predecessor, and that this applied strongly in this case. In the words of O'Conluain:

There is a generalisation that applies, and that is, Ministers are seldom excited about their colleagues' legacy. Politics transact in narrow windows of time... and... nothing was ever said but it was quite obvious that Minister Woods had little or no interest in ICT... and to some extent that explains why the enthusiasm petered out and dwindled ultimately. They had four years between governments and they tend to set their own agendas... Minister Woods had an interest in disadvantage, that policy area, but not ICT.

Hallissey saw the perception that 'the ICT thing was done' as contributing to neglect of this area by Ministers who came after Michael Martin and his advisor Peter McDonagh and that this lack of attention 'was a problem afterwards.' Knox reflected that post Michael Martin 'the wheels came off the chariot' and 'the brakes were applied' indicating the sense that the civil servants within the DES wished to assert more influence and control over this area of educational policy and provision in the wake of a very pro-active Minister.

The political imperative may be seen to impact on the course of events at all significant stages of the development and implementation process. The political unwillingness to commit to long term funding and an initial uncertainty regarding the amounts available for investment coloured the policy development stage. This uncertainty and conservatism regarding funding led policy makers to consider the need to focus resources rather than to aim for a mass roll-out approach which was eventually favoured due to consideration based around equality of provision. The political imperative and resulting emphasis on measureable outcomes was also seen to influence the balance of spending towards capital expenditure and infrastructure at the expense of teacher development.

Those interviewees closest to the policy making process (O'Conluain and Kelly) saw what emerged as Schools IT2000 as a policy framework rather than a full statement of policy due to amongst other considerations the desire for things to happen quickly as dictated by the political imperative. O'Conluain provided the following explanation for a 'policy framework' recognising the need for further consultation to be part of the process:

The Minister at the time was in a hurry. Funding had become available on a very significant scale. An enthusiastic Minister who had a vision for ICT wanted things to happen quickly and strategically in the circumstances we felt that the best response would be to provide a policy framework rather than get bogged down in trying to redefine what policy might be to the nth degree. So there were two reasons for a framework. One, a belief anyway that you needed to allow it to evolve and you needed others to be part of that process and secondly from a practical point of view... the system was in a hurry so we wanted to get the actors moving.

Kelly outlined his own involvement in drafting the 'framework' document in conjunction with Peter McDonagh also emphasising that the substantive detail was to follow and recognising the political dimension:

I worked very closely with Peter McDonagh and I made out a draft of a document, I set out headings, and that was based on my experienced of what we had been doing in the previous number of years with schools... also the fact that I had done a fair bit of research myself on the UK side... I had also looked at what was happening in Scandinavia. I have a lot of contacts in Sweden and Finland, those countries, and I had seen that there were things we needed to do so we prepared that... which and it finally became Schools IT2000... now as you may well understand, Schools IT2000 was idealistic to a great extent. It was also quite political because you were protecting all kinds of elements with it, and it didn't have the detail in it. That was to be left to happen at a later stage.

Knox's view regarding the lack of real detail and the consequence that policy was been created on the hoof by those engaged at the ground levels is given credence by the

understanding of policy as ‘policy framework’ expressed here by O’Conluain and Kelly. From the perspective and understanding of these two key policy makers there was, due in part to the political imperative, to be no real detail. In addition Kelly saw the structures (the NCTE and the ICT Policy Unit in the DES) themselves as political in that they provided a convenient reference point for political figures in relation to indicating and justifying activity.

The political imperative also drove the implementation process as reflected in the emphasis on meeting short-term targets with a view to justifying the investment and providing positive publicity in relation to the targets met. In respect of implementation via the NCTE Mulkeen and Galvin both drew particular attention to how, due to the political imperative, there was a quick start up to the detriment of consultation and the establishment of structures which would have aided schools in capitalising fully on the funding received. Mulkeen outlined how:

It might make more sense to develop policy in a more logical framework, starting with a clear principal of putting the IT advisors in place and then launching the grants into schools but politically that would have been very hard to do because it would have been a year before action hit the ground, but logically I think it doesn’t make sense to throw cash out without guidelines about how to use it, without advice and support and structures in place.

A number of interviewees drew particular attention to the perceived political imperative and its influence in the context of the numbers of teachers participating in professional development courses. In this regard interviewees also commented on the perceived quantity versus quality dichotomy with the view advanced that the emphasis was on ensuring high numbers of participants rather than on the provision of a worthwhile learning experience. As outlined by Hallissey:

The model of teacher professional development for ICT in schools has been relatively simplistic. It has been a train the trainer model... initially [there was] far too much emphasis on skills, also too much emphasis on fast roll out at the beginning and this was down to political pressure.

According to Knox ‘there was targets set for teaching so many teachers in a year which is crazy...quantity not quality was the byword there... and Michael Martin drove that.’ Knox went on to elaborate on how aiming to meet these targets placed difficult demands on his colleagues in the NCTE at the time due to issues of resourcing and a lack of detailed guidance or input from the DES in relation to how these targets could be met. Morrissey

who was the Director of the NCTE at the time also recognised the drive and the pressure for ICT training for teachers stating that ‘it was quite incredible, we were bounced forward actually and we wound up by the end of that year putting over eight and a half thousand teachers through a training course running in education centres.’ He concurred with Knox in relation to the challenges this presented for the Centre, and outlined how these challenges mitigated against pursuing more strategic dimensions of their work:

It was kind of hard, you had people who were trying to do their best inside an initial job, some great people, you know... but on the other hand there was such a momentum... such a pent up feeling of wanting to do action... I told you the thing about the professional development of teachers, that took us by surprise, and there was money being rolled out, and again we were at the building block level, maybe not that massively strategic because it's very hard to be strategic about implementing something if you don't have the building in place in the first place.

A further example of how the political imperative affected implementation via the NCTE related to the SIP project. As described by Mulkeen:

there was a political imperative to include more schools in SIP which led to the idea of clusters of schools. Now that's not a bad idea, because it encouraged more schools to get involved, but it was... the drive from the Department, and I presume that came right from the top... was that nobody who applied for SIP should be turned away disappointed, so they were pushed into slightly artificial clusters. And that's... to some extent it's policy driven by a fear of bad publicity, so that... we don't want schools complaining, we want everyone to go away happy, so therefore we want to draw in as many people as possible.

In similar vein Kelly saw the provision of a learning environment through Scolinet as ‘fizzling out’ as there was no political interest in this. More generally Galvin also saw the official evaluation with its emphasis on measureable outputs as underpinned by a political imperative in the sense that it provided justification for investment but told nothing of depth about what was actually happening in schools:

There's nothing there that shows any understanding at all of what it's like to stand up in a classroom and use information technology in a school. And the leaps and bounds that we've seen in certain schools over the last couple of years, they're not represented in that, really. It's all nuts and bolts. And they're grand. Figures are grand. Policy-makers need their figures. But I think if you strip back those figures and look at them closely, there's an awful lot of worrying sub-strands which just aren't surfaced when you focus on measurable outputs alone...

Summary

Linked to the perception of ‘external influences’ the data contributed by interviewees reflects the view that DES policy in relation to ICTs in post-primary education was influenced significantly by a ‘political imperative’ to introduce technology into schools so as to be seen to be active and progressive in this area of educational provision. This

political imperative was perceived as strongly influenced and driven by influences external to the field of education and premised on the basis of an economic rather than an educational rationale. The political imperative exerted significant influence in relation to policy formulation, implementation and evaluation and as such has been an influencing factor in relation to all stages of the policy process. This imperative resulted in, amongst other factors, a short term focus and an emphasis on quantitatively measureable outcomes. The influence of key politicians and their advisors is a significant aspect of the political context.

Section 3: The Contexts

Policy development and implementation may be interpreted as having been influenced by the multiple contexts detailed by interviewees: the macro or systems level context, the micro or school context, the teacher context and the industrial relations context have emerged from the data. The following sections will detail in turn the significance and influence of each of these contexts as identified and developed by interviewees.

The Macro/System Context

The macro or system level context relates in the main to the norms and cultures of the DES. Aspects of this context identified by interviewees include a cautious conservative approach, especially in relation to long term expenditure, an emphasis on the short term as driven by the political imperative, a dearth of leadership in relation to policy making, a low but growing culture of educational policy being based on research, a centralised approach to policy management and implementation, and a poor track record in relation to policy evaluation and dissemination. System fragmentation was also identified as a significant influencing aspect of the broader macro context.

Many interviewees including Drury, Oldham, Knox, O’Cannain, Turpin and Marshall drew attention to what they saw as the conservative nature of the DES with respect to change and related expenditure. Oldham saw that in respect of ICT there was a fear of actioning too soon and ‘getting it wrong’ but identified some change in Department of Education culture in the mid 1990’s reflected by a greater openness and more outward looking approach influenced by EU connections built through the Inspectorate. Prior to this Oldham saw ‘a good deal of kicking for touch’ as it was not possible to give the ‘enormous resource

support' required. O'Cannain also recognised this change in attitude in the lead in to Schools IT2000 characterised by a willingness to invest in IT in education that had not been in evidence previously. The willingness to spend and the availability of funding had the effect of fast-tracking policy to the detriment of a significant consultative process which O'Cannain saw as more of a priority when funding was limited. Drury drew attention to DES conservatism in the context of his work with the Steering Group where he experienced the role of DES personnel as being to ensure that was no 'opening of the floodgates' in relation to expenditure. Turpin and Marshall saw a cautious conservatism as part of the culture of the DES. Referring to a perceived 'inertia' within the system Marshall saw the role of civil servants such as the DES Inspectors as not to drive a change agenda but to maintain 'the status quo' and saw this as a major impediment to enacting change in the context of ICT. In similar vein Knox saw government based innovation as 'doomed to failure' as civil servants are not innovators by their nature and drew on his experiences of working within the Department of Education over a three year period to outline how his 'overriding impression of the way they did their business, [was] that caution was a key word... to make haste very slowly. And anything that would tie them into making long term investments was going to be just thrown out the door.' O'Conluain attributed this to an uncertainty regarding budgets which made it impossible from an exchequer point of view to commit to funding over an extended period and whilst he did not view this as crippling their work he acknowledged that this 'generated to some extent an incapacity to flow with certain things.' The fact that 'politics transact in narrow windows of time' (O'Conluain) captures the influence of the political imperative as regards a focus on the short-term and illustrates how this can be seen as more than purely a factor of simple economics.

In the context of cautious conservatism the DES was perceived as showing limited leadership in relation to policy making and as enacting an overly centralised approach to policy management and implementation. Drury saw the remit of the DES in respect of the day to day management of education as mitigating against more strategic thinking and the ability to plan for the more medium to long term resulting in a default to short-term prioritisation. Drury saw a lot of pressure on the achievement of short term results which he viewed as conflicting with long term indicators and leading to micromanagement from the centre so as to ensure the realisation of short term aims. In the context of Schools IT2000 Drury saw the NCTE as adopting and replicating the DES approach to management

whereby everything ‘had to be micromanaged...from the centre.’ He also saw that the provision of funding and how the money was spent was influenced by DES culture which he referred to as ‘conventional spending’ and questioned whether this was critically examined ‘in isolation to the way the present system operates’ suggesting the possibility of an alternative less culturally and historically laden approach although Leydon saw the DES as ‘an extraordinarily resilient body in terms of hanging on to old norms of operation.’

Turpin outlined the view that the DES ‘is poor at strategic planning and the setting of policy’ and that ‘they seem to spend more time in operational management and firefighting than they do in the long term...thinking about what their real role is.’ In respect of what may be described as ‘operational management’ Knox was critical of a perceived lack of direction or leadership from the DES whereby ‘the Department would only tell you where you went wrong after the event, they would never tell you what might work’ and that ‘they were leading from behind’ due in part to a perceived lack of clarity regarding the specifics of policy and policy implementation. In this regard Kelly alluded to a more ‘major role’ for the Department and McLaughlin echoing Wall referenced staffing issues which may be seen as impacting on the leadership capacity of the DES:

I think in the civil service unfortunately almost like in the schools a whole lot tends to get done almost on a voluntary basis, huge policy areas are being driven by people that maybe have a passion for something but they don’t necessarily get all the back-up they need.

Mulkeen drew attention to ‘a very low but growing culture of educational policy being based on research’, a view sustained by the inputs of Kelly, McLaughlin and O’Conluain in respect of Schools IT2000 which detailed a basis in personal experience and developments in the neighbouring UK and to a much lesser extent other European countries rather than in research. That said O’Conluain advanced the view that there was little to be gained from a review of UK developments and that as a consequence ‘we blazed the trail’:

Internationally, we looked quite a lot at what was happening in the UK. We had a lot of interaction with various bodies in the UK, and how they approached policy definition there and implementation. We felt that there wasn't a lot to be learned there... that's why we blazed the trail.

In spite of this Oldham viewed looking more to ‘the outside world’ as reflecting a positive change in Department of Education culture in the 1990’s characterised by a greater level of openness to developments facilitated by the increased availability of funding and opportunity to meet with peers at international conferences. The capacity of the DES for

research informed policy was also referenced in the context of evaluation and dissemination mechanisms by Galvin and Leydon amongst others. Leydon saw a significant capacity issue at system level to document and share innovation to the detriment of ongoing policy development stating that: ‘it’s not capable of integrating it [data generated] in a manner which can help it to make policy decisions.’

Interviewees saw the DES as a significant player on the policy landscape and recognised its interplay with many other agencies (including the NCTE and the NCCA) which together form the entirety of the Irish educational context. The presence of a multitude of agencies each with its own role and narrow remit was seen as creating structural fragmentation which was detailed by interviewees as a significant feature of the macro or systems level context. As an illustration of this Turpin saw the NCCA as ‘supporters off’ but ‘not having the authority to drive explicitly ICT policy in schools.’ Such fragmentation was perceived as impacting negatively on the overall capacity and efficiency of the system due to the limited potential for cross and inter-agency policy processes.

Mulkeen outlined how ‘different pockets of the system tend to think in different ways’ and that in respect of the ICT initiative ‘it doesn’t necessarily follow that the NCTE strategy is being developed in close harmony with the NCCA strategy.’ This was elaborated on by Drury and Fitzpatrick in particular with Drury articulating the need for the NCTE to work ‘in parallel’ with other groups and Fitzpatrick outlining how the NCTE’s remit in respect of ICT may have served to limit a broader discussion of its place although she acknowledging that the NCCA was also ‘part of a trend’ in this regard attributable to the distinction between the central and peripheral aspects of its work:

Perhaps that's something of what we have lacked with regard to our discussions about ICT, putting them in a particular place, and not engaging with the range of stakeholders who need to be involved in a discussion about the future of ICT.

Fitzpatrick went on to outline how:

The discussion around curriculum and assessment has tended to be exclusive of or has tended to exclude to some extent or not be connected with discussions around ICT - we are simply part of a trend in that regard... we see that trend shifting and changing.

Marshall and Hallissey reflected similar views in respect of a lack of ‘joined up thinking’ within the education system and a culture of quango’s not working together which was

reflected by Bhreathnach as follows in the context of her work with the School Development Planning Initiative (SDPI):

there was a time when if a support service was set up it was set up with a particular management structure and perhaps with a particular Inspector in charge, and it was hosted in a particular place, so that it had its own working practices and its own remit and so on and it didn't necessarily know what anything else was doing. And there wasn't a forum for people to get together... because we're supposed to have a whole-school dimension as far as possible we've tried to establish relationships with a lot of bodies, support services, Universities, University education departments and so on. And as well as teacher unions and education committees and trustee bodies, management bodies, all of those. But in a sense I suppose it is that people have a main concern and then there are associated concerns but they're not the main concern. And they have to keep their eye on the main concern, and therefore the capacity that they have to engage in dealing with the overlaps, I suppose is minimal.

Similar to Fitzpatrick, Bhreathnach distinguished between the 'main' and 'associated' concerns and identified how the dominance of this type of structural arrangement across agencies underpinned the perceived general level of fragmentation within the system. Fitzpatrick saw this structural fragmentation and related lack of 'joined up thinking' as mitigating against a shared understanding and clarity across agencies regarding the purpose of ICTs in education, which she saw as impacting at both the policy and practitioners levels: 'I'm not sure that we've experienced shared purpose amongst agents... that at a policy level as well as at a practitioner level, that we're all clear on what it is we're about with regard to ICT.' As such this may be seen as lending itself to the dominance of sectoral interests rather than a shared agenda in respect of ICT. Hallissey saw the ICT Policy Unit as having a role in bringing agencies together so as to create 'joined up thinking' and Bhreathnach in similar vein reflected that:

There is a kind of a fragmentation, I think in Irish education, Irish life generally, I suppose, where one hand doesn't know what the other hand is doing to a certain extent. What I would feel is that if ICT is to have impact within a curriculum, well then there should be some kind of framework whereby NCTE and ourselves [SDPI] and various curriculum support services and the school completion programme... and all of those should be able to relate one to another and to see to what extent ICT can support their work that they're doing.

System fragmentation also featured in respect of student assessment which was strongly perceived as influencing ICT implementation. Wall from the DES perspective summarised the significance of student assessment and evidenced the issue of fragmentation drawing attention to the particular role and remit of the NCCA in this regard:

I think we're all as a state wrestling with the assessment issue... now it's not my baby and I can't pretend to know that much about it, but I don't think anybody isn't aware that the high stakes exam puts immense pressures in schools on teachers and on students and that because it's such a high stakes exam sometimes it can be difficult to focus on areas you need to focus on, and there are alternative ways of doing assessment I suppose, but they require massive systems change, and I'm probably... this is a conversation you'd probably need to have with the NCCA I suppose...

This view was reinforced by O'Conluain who saw ICT not featuring in assessment as a limiting factor and also referenced structural fragmentation in respect of assessment:

You're touching on an area here that isn't entirely explained within the ICT context. Traditionally there's been a very poor emphasis on assessment in the system... at all levels. We have the national council for curriculum and assessment. I would say we have a national council for curriculum full stop. In recent years there has been some more work in assessment, but you're asking the question, why isn't assessment fused to curriculum. That's your answer.

The Micro/School Context

The micro or school context was detailed by interviewees as significant in shaping policy implementation. The role of State curriculum and in particular student assessment, the organisational culture of schools being subject and classroom based and a reliance on a transmission model of teaching were the most salient features outlined. The significance of the school context as described by interviewees is in contrast to the implied context neutral nature of policy as stated and this micro context is significant by virtue of its non-consideration within the policy process. As suggested by Bhreathnach 'I suppose not enough account was taken of the fact that schools varied enormously in the level of expertise that was already present in the schools.' This may be related to the version of change as mediated by the DES, with the introduction of technology being seen as a technical rather than as a curricular, cultural or organisational innovation. This in turn can be related to the influence of the political imperative seeing change as cosmetic 'like lipstick on a pig' (Marshall) rather than deep, meaningful and disruptive and to structural fragmentation which makes change beyond the bounds of an individual issue or initiative impractical and difficult.

All interviewees raised the issue of assessment as the most significant factor influencing priorities and operations at the school level within post-primary education. In this context, many interviewees referenced the impact of the 'point's race' or 'the high stakes exam' which was seen as dictating an emphasis on 'syllabus coverage.' The general culture of

schools was seen as resenting and resisting anything imposed from above with ICT seen as 'a deviation from the norm' which might detract from the attention to exam based achievement. System fragmentation and the industrial relations context were also cited as influencing adherence to the terminally based system of assessment and limiting consideration of alternative forms which might catalyse ICT use.

Interviewees also drew attention to the organisational structures of schools being subject based and compartmentalised into forty minute class periods which coupled with the emphasis on examinations was seen as driving schooling towards 'whole class teaching' as the dominant pedagogical approach. A number of interviewees saw the introduction of technology in the context of change to the fundamental system of school organisation. Mulkeen drew attention to the complexity of facilitating meaningful use of technology seeing that 'integrating ICT into schools involves much deeper structural changes than just putting computers in classrooms.' He also acknowledged the difficulty in override these structures whilst alluding to the perceived simplicity of the approach taken in Schools IT2000, reflected in the prominence of innovation-focused rather than social practice type variables. Drury recognised that at a general level ICT was in fact about change and Hallissey saw capitalising on ICTs as requiring 'a paradigm shift' towards 'student centered classrooms' with 'teachers that work more in the role of a guide or a facilitator' but did not 'see anything like that discussion happening in an Irish context.' He saw that 'the assessment drives teaching and learning' and that approaches to assessment needed to be modified so that teachers and students would see value in and be rewarded for partaking in the type of 'student centred enquiry based projects' facilitated by ICT. Drury saw the starting point for 'looking at our assessment system' as the broadening of fundamental learning goals or outcomes to reflect contemporary possibilities and saw the role of ICT as supporting their realisation rather than as a starting point. Fitzpatrick concurred with the need for ICTs to be reflected in curriculum and assessment so as to influence teacher use making reference to the need for 'light and heat' to be applied within the system for change to happen. In line with Drury and Hallissey she saw the need to reprioritise and refocus the curriculum with the effect that:

The embedding of ICT becomes a lot more appetising and appealing and interesting when the other curriculum and assessment component that's around it are much tighter and clearer and smaller for teachers as well.

The Teacher Context

The teacher context was portrayed by interviewees as influenced by the micro-context of the school environment and by individual teacher attitudes towards technology. Interviewees portrayed teachers as being positively disposed towards technology in the main but acknowledged varying perspectives ranging from great enthusiasm to resistance in some cases. Whilst the teacher context may be understood to affect directly the enactment of policy the limited recognition and attention to this is evidenced by the virtual non-involvement of teachers within the policy process and the one size fits all approach to policy implementation including professional development and support.

Many interviewees including Guilmartin, Leydon, O’Cannain and Bhreathnach drew attention to the excitement and enthusiasm experienced by teachers at time of the launch of Schools IT2000 due to the levels of resources that were being committed which were seen as having the potential to significantly change and enhance the education system. Guilmartin outlined how the majority wished to get involved, some because they saw it as a niche area in which they could develop specialisation and expertise and others because they saw it as benefitting the teaching of their subject. Bhreathnach noted ‘hype’ and that it was ‘the in thing to do’ with the result that teachers were willing to give up their own time for training. Leydon whilst referencing the ‘enormous expectation’ and ‘excitement’ generally acknowledged that for some teachers there may have been a reluctance to become involved due to cultural barriers related to their own ‘self identity’ and how they saw themselves as professionals whilst Mulkeen, Fitzpatrick and McLaughlin identified practical and cultural barriers to involvement at the school level including those related to the influence of assessment within the micro context. Morrissey saw teachers as ‘starved’ of professional development at the time of Schools IT2000 but O’Cannain amongst others detailed how the initial high expectations had not been met due to the resourcing of the initiative and as a consequence the level of support provided by the NCTE. In this regard Leydon saw the centrally managed standardised approach as inefficient and inappropriate as it failed to take into account the varying local needs and contexts. She attributed the centralised approach enacted to the culture of public life and the drive for implementation to happen quickly which she saw as mitigating against the positive changes expected by teachers:

But of course it didn’t. Because it all happened too quick, I think, you see, there’s aspects of our system as well which I think militate against efficiency... I’m increasingly of the

view in all areas of public life that actually we do need greater decentralisation because when it's a totally central effort you know, it just doesn't work as efficiently. Because you know... the country is very variegated, I mean you're talking about places like the east coast, you're talking about places like Shannon and Ennis... there's such differences in the needs of schools and in the composition of schools and in the local industry infrastructure and the surrounding places that I don't think a central system can respond to that very effectively, particularly when you're talking about education planning and delivery of resources...

Marshall saw teachers as 'core' to change within the system and an effective professional development model as the starting point in respect of achieving meaningful implementation. O'Conluain recognised the particular significance of an enthusiastic, accomplished and committed teacher with regard to ICT implementation. Fitzpatrick detailed how, as in this case, teachers have often been placed at the end of a chain of events with respect to change, and have had change 'done' to them rather than having been part of the change process. She saw omission of teacher involvement as having a negative influence on the policymaking exercise:

I think those amongst other studies have taught us a lot more about how effective change happens in a professional development context, and I think part of the issue for us at a general level, not just specific to ICT, has been the placement of teachers at the end of a decision making line. So teachers have had change done to them.

In this respect the view was also expressed that many of the DES ICT Steering Group members were formally teachers and that this in itself constituted a form of teacher input.

The Industrial Relations Context

The 'very conservative funnel' created by teacher unions was viewed by O'Conluain as a significant aspect of the Irish cultural context, a feature he saw as not being replicated as strongly in other contexts. Generally teacher unions were perceived as having little direct interest in respect of ICT as evidenced by the lack of documentation developed prior to the mid '90's although it was acknowledged that the primary teacher union (the INTO) was active sooner than its equivalent at post-primary (the ASTI). Oldham noted tensions in respect of coursework assessment as hindering the development of ICT and this was referenced by Morrissey in the context of what he perceived as 'vested interests' with the effect that 'nobody wants at any particular time to change anything.' Leydon from the ASTI perspective acknowledged some resistance and apathy amongst a cohort of members towards ICT and noted a strong union stance regarding the involvement of teachers in

assessment based on the perceived credibility of the current system. O’Conluain and McLaughlin saw the union role as being in respect of the accumulation of resources with little or no consideration or vision for their use. O’Conluain saw that the teacher unions were dominant in respect of any debate regarding assessment by virtue of their representation on agencies like the NCCA and saw tensions emerging between the teacher unions and other agencies (such as the National Association of Principals and Deputy Principals (NAPD) and the Irish Primary Principals’ Network (IPPN)) which he perceived as more interested in addressing ‘professional issues’:

The reality is, while you have powerful teaching unions, you don't want a public discourse on outcomes, on assessment. That's the reason that assessment hasn't featured in curriculum design and implementation in this country. Once you move in that direction you expose teachers to more accountability, more public scrutiny...once you make outcomes more measurable, once assessment becomes more tangible... there's less fog to hide in...so it makes sense if you are a powerful union to call for debates about everything under the sun except assessment... and look at how curriculum is devised and mediated in this country. The NCCA itself is controlled by the teaching unions. The teaching council itself is controlled by the unions.

Mulkeen noted industrial relations tensions at the time of the enactment of Schools IT2000 regarding substitution and release for training with the effect that teachers wishing to participate had to do so in their own time.

Summary

Interviewees perceived policy development and implementation to have been influenced by multiple contexts with the macro or systems level context, the micro or school context, the teacher context and the industrial relations context emerging prominently from the interview data.

The macro or system level context was related to the norms and cultures of the DES. Interviewees identified a cautious conservative approach, especially in relation to long term expenditure, an emphasis on the short term as driven by the political imperative, a dearth of leadership in relation to policy making, a low but growing culture of educational policy being based on research, a centralised approach to policy management and implementation, and a poor track record in relation to policy evaluation and dissemination as the most significant features of this context. System fragmentation created by the presence of a multitude of agencies each with their own narrow remit and area of responsibility, coupled

with a culture of each agency working independently, was also identified as a significant influencing aspect of the broader macro context.

The micro or school context was seen as significant in shaping policy implementation. The role of curriculum and assessment, the organisational culture of schools being subject and classroom based and a reliance on a transmission model of teaching were the most salient features outlined. Whilst school context was identified by interviewees as affecting implementation this did not feature prominently within policy deliberations or in the resultant policy. This may be related to the version of change mediated by the DES, with technology being seen as a technical rather than as a curricular, cultural or organisational innovation. This in turn can be related to the influence of the political imperative dictating change at the surface level and to structural fragmentation which makes change beyond the bounds of an individual issue or initiative impractical and difficult.

The teacher context was portrayed as influence by the micro/school context and by individual teacher attitudes to technology. Although the teacher context was recognised as directly affecting implementation at the classroom level interviewees saw limited consideration of this as reflected by the virtual non-involvement of teachers within the policy process and the one size fits all approach to policy implementation including teacher professional development and support.

The industrial relations context was seen as impacting on the implementation of ICT by virtue of teacher union dominance of any debate regarding assessment via their significant presence at representational fora.

Summary and Conclusion

This chapter has outlined the factors perceived by interviewees as influencing DES policy in relation to ICTs in post-primary education. Interviewees saw that the drive to implement technology within education originated from outside the educational community with the influence of business and industry particularly significant. A number of European initiatives, the Information Society Commission and Ireland's poor ranking in terms of readiness for the information age all combined to initiate activity within the DES where internally the drive originated from the technical side of the Department. These external

influences advanced an economic rather than an educational rationale as political and industrial influences drove the policy agenda. The absence of consultation with the CESI was seen as illustrative of a general non-adherence to a partnership based approach to policy development which was perceived by some as affecting resultant implementation.

Interviewees also identified a significant political imperative to introduce technology into schools so as to be seen as active and progressive in this area of educational provision. This political imperative was influenced by the external and industrial factors and by key political figures who recognised and advanced the ICT agenda. The role of key politicians and their advisors is a significant dimension of the political imperative. The political imperative was perceived as influencing all stages of the policy process, from development right through to implementation and evaluation and was seen to result in, amongst other factors, a short term focus and an emphasis on quantitatively measureable outcomes.

Interviewees saw the macro culture of the DES and system fragmentation via the multitude of agencies as impacting on the nature of policy development and implementation. The micro or school context was detailed as significant in terms of implementation but did not feature prominently in policy deliberations or output. This lack of attention to the micro/school context can be linked to the version of change adopted related to the effect of the political imperative. The teacher context was seen as significant in relation to school based implementation but largely unaddressed in the policy development and implementation processes. The industrial relations context was viewed as imposing a level of conservatism within the education system particularly in relation to provisions for student assessment which was seen as having a knock-on effect in relation to ICT implementation.

Chapter 7 Findings 3 - The Implementation of Schools IT2000

Introduction

This chapter set out to address the implementation of Schools IT2000 drawing on the data collected via the research interviews. It is structured around three main sections: section one details the main implementation agency (the NCTE); section two addresses in turn the implementation of the three main strands of Schools IT2000 (TII, TSI & SSI); and, section three addresses the perceived overall outcomes and evaluation of this policy initiative. Where relevant excerpts from the interviews have been quoted to illuminate and support the narrative and to provide fidelity for the research undertaken.

Section 1: The NCTE

Schools IT2000 proposed a number of structures to effect policy implementation, the core agency being the NCTE supplemented by a proposed ICTs co-ordinating unit situated within the DES and a network of IT Advisors based in Education Centres. The data reflects the view that the NCTE managed to achieve implementation relative to the outcomes outlined in the framework policy document as quantified by the numbers of computers in schools and the numbers of teachers participating in professional development courses. Other positive aspects of the NCTE's work identified include the increased awareness regarding ICTs in schools, the raising of private investments to supplement government funding and the provision of guidelines for hardware and software purchasing. The setting up and maintaining of an agency such as the NCTE was viewed by some interviewees as an end in itself, as it provided policy structures and a formalisation and professionalisation of work regarding technology in schools for the long term. Interviewees expressed a generally positive disposition in relation to the dynamism, hard-work and commitment of its initial personnel in particular.

The exact remit and purpose of the NCTE in relation to policy formulation and/or implementation was viewed as unclear by some interviewees, and the ability of the NCTE to carry out its work was seen to have been influenced by the varying nature of its relationship with the DES/DES ICT Co-ordinating Unit at differing stages in the policy implementation process with issues of direction and control appearing prominent. During

the early stages the NCTE was perceived as suffering from a lack of direction from the DES (due to the non-establishment of the planned policy unit) and from the Schools IT2000 policy document to the effect that it was devising day to day policy ‘on the hoof.’ As outlined by former NCTE employee Knox the agency was charged with the difficult task of spending the substantial budget allocated to schools ‘without a structure, and without a policy.’ These initial stages were characterised by poor levels of administrative support, delays in relation to the formalising of contracts for key personnel and inappropriate physical accommodation. Although its main concern at this stage was the rolling out of the Schools IT2000 policy the ‘sense of a Policy Unit’ as it was put by this former NCTE employee overshadowed any potential policy ‘thinking’ at this stage. Following the change in Minister from Michael Martin to Dr. Michael Woods and the belated setting up of the ICT Co-ordinating Unit in the DES, the work of the NCTE was more closely monitored although the influence of the Unit at this time was portrayed as a negative one due to its failure to make any practical or political decisions over an eighteen month period. Marshall saw the role of the Unit as to say ‘no’ or to slow things down and Galvin and others drew particular attention to how the nature of the personnel who were appointed (‘civil service types’, ‘no background in education at all’, ‘well intentioned, perhaps, but way out of their depth’) had a particularly negative effect:

that unit which should have been a beacon, a place of vision became an absolute bloody bottleneck. And nothing happened because of the lack of decisions or the deliberate slowing of decisions that took place there...any progress that had been made under IT2000 more or less fell apart in terms of vision, leadership, direction, impetus, because of the decision that was made, to structure and staff the Unit in the way that it was done.

Relationships between the NCTE and Other Agencies

The positioning of the NCTE with respect to the DES was the subject of some divergent views. One of the key policy drafters Drury supported the NCTE being separate from the DES so as to allow it space and scope for longer term strategic thinking. This view was reinforced by O’Conluain who similarly expressed the perceived need for a nexus of expertise located outside the Department where ‘it would have more room to breathe and be less overshadowed by big brother in Marlborough Street.’ In the absence of any budgetary control the NCTE became more a vehicle for policy implementation rather than strategic thinking, and the knock on effect of being separate from the DES was considered by Mulkeen as a mitigating factor: being based in Marlborough Street it may have been easier to have a relationship with senior personnel in the DES and hence shape policy. The

strained relationship between the NCTE and the DES at various stages is attributed by interviewees to a lack of clarity regarding their respective roles and responsibilities, issues related to communication including from the NCTE perspective the lack of a sounding board for direction or advice, and the lack of clear policy. Turpin addressed the lack of long term commitment in terms of contracts and the requirement to process budgets through ‘middle level civil servants’ as constraining spending and further contributing to these tensions whilst Marshall also saw this as a blocking mechanism which impacted on the NCTE’s work.

The respective roles of the DES and NCTE in respect of policy making were commented on by many interviewees with a consensus emerging that the role of the NCTE developed more in respect of policy implementation than policy formulation. Hallissey and Marshall described the NCTE as ‘not research driven’ and interviewees more generally saw the policy role of the NCTE as having been diminished to the point that the NCTE was seen solely as a delivery agent with policy being controlled by the civil servants based within the ICTs co-ordinating Unit and the DES. Mulkeen highlighted the perceived ‘upside down’ nature of arrangements in respect of the NCTE and the DES/ICT Policy Unit and their respective roles and responsibilities at differing stages:

in the initial model NCTE seemed to plough its own furrow, it seemed to have its own ability to work out how things ought to be done, but in recent years an awful lot of that has been pulled back into the Department and the NCTE is much more tightly controlled. Now you could actually characterise that as having a group of professional educators actually implementing the policy in terms of making sure the accounts are in order, making sure the finances are properly spent, and a group of professional civil servants actually deciding what’s educationally sound and steering it, which seems to me to be an upside down way of doing, but that’s what we have at the moment.

Key figures in the policy process reflected a view of the NCTE as being mainly in respect of policy implementation with the responsibility for policy development seen to reside firmly within the DES. Wall identified what he described as the ‘advisory’ and ‘operational’ roles of the NCTE, but with an emphasis on the operational seeing that they ‘spec the requirements for schools’ and ‘advise us on technical issues particularly.’ In his estimation ‘the NCTE is a creature of the Department: they advise us, but we make policy.’ Kelly and Turpin amongst others also emphasised the implementation dimension and Galvin saw the non-policy role as problematic in the sense that it meant policy was left ‘to the whims of two or three civil servants with adequate understandings of neither education

nor technology.’ O’Conluain in similar vein to Wall stated that whilst it ‘wasn’t implementation versus policy design’ that ultimately the responsibility for policy rested within the DES. From the NCTE perspective Morrissey concurred with the views expressed by his DES colleagues outlining that ‘our major function is the implementation of policy that the Department of Education want us to do.’ The sense of serving and carrying out the wishes of the DES is clearly evident in the following quote from Morrissey which illustrates a clear demarcation of roles from the NCTE Directors perspective:

I would be confident that we are implementing in a way and a manner... that exactly reflects what they want us to do. That's our... that's the raison d'etre of the NCTE... to implement what the Department want us to do...

In practical terms Knox reflected that as a consequence of this the NCTE ‘would respond very quickly to prods from above... so you’d find yourself being driven and dragged in directions depending on the pull.’ Turpin in similar vein outlined how ‘they [the NCTE] were implementing something which wasn’t clearly thought through and it tended to change on a regular basis.’ An emphasis on the provision of infrastructure was a significant undercurrent to interviewee perceptions of the work of the NCTE also reflected by Morrissey in the context of the period post Schools IT2000 and the follow up initiative when there was a lacuna in terms of formal policy provision:

It didn't cause us to be like rudderless boats out here, the line was very clear... I don't know what our policy could have said... I suppose change our emphasis ... what a policy could have said extra given the fact that we still needed more infrastructure, still needed broadband in schools... might have said a lot about innovation, I'm just not sure.

A number of interviewees including Leydon drew attention to issues related to a non-adherence to a partnership approach to governance and liaison by the NCTE resulting in a perceived lack of openness, poor communication, lack of ‘proper’ procedures and clarity regarding role. This non-adherence was attributed in part to the political imperative whereby policy and its related implementation structures emerged very quickly driven by an economic rationale. This was perceived as effecting implementation at the level of teacher buy-in via the various union, management and curriculum associations. Knox and Marshall acknowledged this limitation with particular reference to the non-establishment of a proposed industrial liaison committee. Knox also saw scope for greater liaison with third-level personnel and for the greater establishment of international links. A number of interviewees raised criticisms regarding the NCTE’s capacity for communication, for information flow within the agency and the ongoing internal evaluation of its work. Whilst

acknowledging the limitations of under resourcing Bhreathnach outlined how the failure to communicate with schools, or to be in a position to respond to their queries, served as one of the factors to dampen initial enthusiasm for the ICT initiative.

Related to partnership the NCTE was seen as working with other educational agencies only to limited effect. However NCTE Director Morrissey was keen to point out collaborations with a number of agencies ‘it’s not that we’ve ploughed a lone furrow here’ and drew attention to its role in curriculum design and review in the context of the Teacher Education Section (TES) of the DES although acknowledging a limited role in respect of discussions regarding curriculum and assessment: ‘we’d be very small fry in those kinds of things.’ Morrissey rejected the suggestion that the NCTE and the NCCA might usefully merge on the basis that ‘the NCCA has no interest whatsoever in hardware and cables and wires and screwdrivers’ at the same time providing an interesting perspective regarding the role of the NCTE. The need for joined up working and thinking across the system was addressed by Hallissey and the difficulty in any one agency effecting real change due to system fragmentation was raised by Galvin in the context of the work of the NCTE:

It’s very difficult for NCTE – because it has a narrow remit just about ICT in education – to suggest to schools how to usefully change their time-table [to get more form ICT]. But one of the weaknesses, of course, is it doesn’t necessarily follow that NCTE strategy is being developed in close harmony with the NCCA strategy... different pockets of the system tend to think in different ways.

From the NCCA perspective engagement with the NCTE was experienced to be ‘on a project specific basis’ suggesting that the levels of collaboration were not as extensive as they may have been with the interface between the two agencies guided by a ‘context for co-operation’ document developed internally by both agencies. In this context the relationship was described as ‘somewhat formal’ and ‘more strategic’ rather than concerned with ‘day to day business.’ Related to this Fitzpatrick reflected that ‘a closer relationship would be facilitated by closer geographical location.’ In terms of links with the SDPI Bhreathnach outlined how ‘there hasn’t been a whole lot of interface, what there has been is information has passed and that’s been it, we haven’t worked together on anything in particular’ and that ‘in a sense there is a disjunction between ICT on the one hand and school planning on the other.’

The work of the NCTE was seen to have been influenced by a number of resourcing and personnel related issues. The general consensus amongst interviewees was that the NCTE suffered from under staffing from the time it was set up and was further hampered by short term planning and contracts which saw key personnel and accumulated expertise lost due to uncertainty over contract renewal. Drury attributed some of the resourcing issues experienced to a perceived overly centralised approach to implementing Schools IT2000. In his view some of the shortages in terms of personnel could have been offset by taking a more devolved approach through Education Centres involving less ‘micromanagement’ of policy implementation ‘from the centre.’ A perceived drift from teaching appointments to ‘more mainstream business world type coordinators’ (Galvin) who did not have an understanding of the educational context was also seen as impacting on the capacity of the NCTE to fulfil its remit. Kelly and Knox both acknowledge the difficulty in recruiting employees who were the ideal ‘fit’ possessing knowledge and experience in both technology and education. Hallissey and Marshall both drew attention to the perceived failure of the NCTE to develop a research basis for its work over time and linked this to limitations in respect of staffing and related capacity.

Summary

The NCTE was set up as the core implementation agency arising out of Schools IT2000. Interviewees acknowledged that the NCTE achieved implementation of the main policy strands relative to the outcomes specified in the policy document but indicated that its work had been impacted upon by limited resourcing, short term planning and a lack of clarity regarding its precise role (policy implementation/formulation) which at times resulted in a strained relationship with the DES. The lack of clarity regarding the precise nature of its role can be traced back to the manner in which Schools IT2000 and its constituent agencies was initiated allowing little time for consideration of the associated detail. The nature of relationships between the NCTE and other agencies including the DES and the NCCA at varying stages was viewed as influencing its ability to fulfil its perceived remit.

Section 2: The Three Main Strands

This section will proceed to consider in turn the implementation of the three main strands of Schools IT2000 – the provision of infrastructure via the TII, teacher training via the TSI and school support in the context of the SIP projects via the SSI.

Strand 1: Infrastructure

The provision of infrastructure was facilitated by means of cash grants to schools which was preferred over the central purchase of equipment. Interviewees viewed this as the most suitable approach as it allowed schools the autonomy to purchase relative to their specific local needs acknowledging that, as a starting point, some schools were better equipped than others. A number of interviewees commented that there may have been some wastage of funds as a consequence of misunderstandings regarding the purpose for which it was intended at the local level. This was detailed as most likely to happen where school budgets were administered on behalf of the Board of Management by a religious representative of the trustees who may not have understood its intended purpose. Initially grant funding was weighted heavily towards small schools on the presumption that they were more hardware deficient relative to larger sized schools although Mulkeen pointed out that there was no solid data on which to base this presumption. Mulkeen was involved in an early evaluation of Schools IT2000 which collected data regarding equipment levels in schools during the initial stages. This data showed up some interesting patterns which, according to Mulkeen, if had been known at the early stages might have shaped differently how grants were distributed in respect of small rural schools. These schools rapidly overtook others in terms of equipment as the grants were weighted so heavily towards them and whilst this was appropriate initially it was not necessary to continue with this model of funding over the course of Schools IT2000.

Kelly in his policy role calculated little economic savings from a potential bulk purchase and in addition to this the decision to grant aid schools (as opposed to central purchase) was perceived by interviewees as influenced and underpinned by a number of factors. It was viewed as an 'act of faith' in schools, allowing them to purchase relative to their needs and avail of local relationships already in place. Building on local relationships was seen as particularly significant given the lack of provision for technical support in Schools IT2000. It was envisaged that whilst schools might pay slightly over the odds for their equipment they might also avail of help in setting up and 'free' ongoing technical support from their local supplier. On the other hand, central purchase was perceived as having the potential to dismantle already established relationships and as requiring 'central support'. Kelly and Knox recognised how in some cases the funding acted as seed capital which was matched

by parents or funds raised by the school such that in effect the grant aid snowballed and the school was able to spend more than the grant received. O’Cannain and Galvin saw this approach as in keeping with the culture of schools, used to receiving money and raising money elsewhere in a public-private venture of sorts. Implementing a centralised purchasing model on the other hand would have required an international tendering process which would have considerably slowed down implementation and was at odds with the political imperative to get technology into the schools rapidly. Interviewees cited the example of ‘the Eircom computer’ which was shipped to schools in cardboard boxes and in some cases was never opened as further support for the provision of grant funding to schools, or perhaps more accurately as a counter argument to central purchase. O’Cannain viewed the local purchase model as suiting the Government at the time as central purchase would have forced politically difficult choices between a number of large scale commercial entities all of whom were providing significant employment within the State.

Although interviewees were supportive of the model employed a number of interviewees expressed reservations regarding the specific manner in which it was enacted, in particular regarding the lack of information or guidance provided to schools prior to administration of the funding. The political imperative was seen to take precedent in respect of this as a more logical framework based on putting IT Advisors in place followed by guidelines and support structures would have delayed the implementation process. Although schools were to have an IT plan in place, effectively the funding was administered to schools without reference to such a plan as ‘most people just changed the name and slotted their school name into [a pro-forma template]’ (Guilmartin). As part of his work with the NCTE Knox put together guideline documents to help schools devise IT plans noting that ‘they were supposed to have school plans [but] the money went out then, it arrived in bank loans.’ He questioned whether this was ‘an educational model’ or ‘an expedient to get rid of ten million in the current budget year.’ Mulkeen was of the view that schools should have been required to apply more formally for their funding and Drury saw engagement with such a process as serving to up skill the school based personnel involved. Bhreathnach reflecting a degree of system fragmentation related to her work with the SDPI drew attention to the fact that guidelines were not finalised and available to schools prior to the deadline for the money being spent and that the IT plan was effectively a template requiring decisions which school based personnel did not have the capacity or information to make. A number

of interviewees drew attention to the tendency for school based decisions in relation to expenditure to be based on economic rather than educational rationales influenced by commercial technology providers. As detailed by Galvin:

Some schools literally handed their budget over to a local provider and said this is what we've got, give us what you can for that, instead of actually going into the whole frame and saying well look, this is what we want to do. Here's what educationally we want, now what can you sell us that will help us do that? It became a case of picking up the phone and looking down through the directory... ringing the first tech provision company that they see, and saying we have x number of thousand, we need a network... can you put one in...without any thought beyond that.

Some interviewees expressed the view that in terms of technology infrastructure schools were not as badly resourced as was made out but that from a political perspective it was advantageous to have a crisis to address. The need for a 'critical minimum' in relation to infrastructure was also expressed. A number of interviewees raised concerns regarding the balance of expenditure towards infrastructure, as distinct, in particular, from teacher professional development and support. Drury felt that there may have been more emphasis on embedding usage rather than on the provision of physical resources and Morrissey acknowledged a continued emphasis on hardware beyond the timeframe of Schools IT2000: 'unfortunately we're still focused a bit on the infrastructure when I prefer taking it for granted... that's our biggest downside or Achilles heel as a country.'

Summary

Interviewees commenting on the model of infrastructure provision were in effect commenting on the model of distribution put in place. The approach taken was viewed as the most appropriate as it fitted with the culture of schools being accustomed to receiving funding and as it compensated for some of the shortcomings in the policy provision, specifically in relation to technical support. However interviewees also identified drawbacks relating to the political imperative which dictated a short term focus with an emphasis on getting the technology into schools to the detriment of planned supporting structures and prior documentation. The lack of clarity regarding purpose is reflected in Drury's view regarding the need to embed usage as distinct from merely providing physical resources. This was in turn reflected by the purchasing considerations at the school level, being based on economic and technology related considerations rather than on desired educational outcomes.

Interviewees' perspectives regarding outcomes reflected the view that an established technology base was installed in schools but interviewees did not see further impacts as a consequence of this improved infrastructure. Mulkeen drew attention to how this provision enabled schools to do the same things better, such as using ICT to teach basic skills, but that there had been no change in the direction of schools as a consequence: 'to some extent we threw money and supports into the system to back up what was already there.' In general interviewees cited the provision of infrastructure as one of the most positive outcomes from Schools IT2000. However enhanced use across the curriculum did not figure amongst the positive outcomes identified and examples of integration detailed by interviewees tended to be related to the SIP initiative. In this regard Hallissey saw policy as 'overly focused on putting machines and boxes into schools' without enough consideration of the teaching, learning and assessment which was to result as a consequence of their presence.

Strand 2: Teacher Training/Professional Development

The provision of upskilling for teachers formed the second main strand of the Schools IT2000 policy, based on a stated target of training 20,000 teachers over the course of the project. Interviewees recounted high participation rate in respect of these courses with seventy percent of teachers participating in one of the courses provided although a number of interviewees drew attention to a perceived 'fudging of numbers' due to the fact that some teachers had participated in the same course more than once, but had been counted each time. This high rate of participation can be linked to the initial levels of teacher enthusiasm for this technology initiative, which against a backdrop of industrial relations tensions saw teachers part take in courses on a voluntary basis in their own time.

The decision to adopt a mass rather than a gradual roll out created an urgent need for basic skills training for teachers to the extent that as the NCTE found its feet, coupled with its limited staffing and time constraints, it took the decision to buy in support to meet the training demands in respect of primary and post-primary teachers. Morrissey acknowledged the drive and pressure for training at the time and interviewees outlined how the NCTE did not have the luxury of devising its own courses relative to identified teacher needs and that given the Ministerial pressure being exerted two bodies who already had work in hand became responsible for courses to teachers, the INTO for primary courses and the

University of Limerick (UL) for post-primary courses. Knox outlined the fraught nature of the discussion internal to the NCTE at the time as it sought to address the pressures being applied:

I remember there was huge debates and huge arguments and huge fights over the best way to do this. The arguments weren't very constructive... there was targets set for teaching so many teachers in a year which is crazy... quantity not quality was the byword there... and Minister Martin drove that... we were driven very hard by the Minister, working very closely and reported directly almost to him, maybe through Seamus and maybe through Frank... maybe through John Denney... but were very close to him and met him personally to report on how we were getting on.

The INTO had a long track record in respect of ICT courses for its members and as outlined by Knox 'the primary one was better because there was more blood spilt in its preparation.' The decision to grant responsibility for post-primary courses to UL was the subject of disapproval by interviewees who questioned the rationale for awarding exclusive rights to provide post-primary courses to this body. Galvin and Oldham amongst others outline how the decision to 'go with UL' had the effect of alienating others in the third-level sector who felt that they could have usefully contributed to the provision of post-primary courses in particular. As a representative of one of the third-level institutions 'cut out' Oldham was more concerned about the narrowing effect on the resultant course than the exclusion of her institution per se. Others including Guilmartin also questioned the decision to bring UL on board given that, in his view, it had not been prominent in ICT developments to date. Guilmartin echoed Galvin's view that a more collaborative approach was warranted, with course development by 'a generic group' encompassing expertise from a number of bodies.

Interviewees concerns regarding the exclusive involvement of UL were deepened by the nature of the courses provided and the manner in which they were setup and run. The view that UL was offering 'ECDL by another name' was echoed by a number of interviewees who saw the provision of a skills/applications focused course as inappropriate in the context of promoting use for teaching and learning. Interviewees saw the provision of 'skills in context' as more appropriate and were of the view that primary courses were more successful due to their greater focus on pedagogical integration. A number of interviewees expressed the view that the approach taken was in effect a mass training exercise reminiscent of that provided in advance of the introduction of the Junior Certificate in 1989. As such it failed to address teacher's individual needs and contexts, and as a

consequence ‘left a bitter taste’ in the mouths of teachers who were initially enthusiastic due in part to the hype created by the policy launch and a prevailing sense that ICT was ‘the fashionable thing’ to be involved with at the time. Rather than capitalise on this enthusiasm the resultant provision was seen as negatively impacting on the potential for teachers to utilise ICTs, and to reinforce the mindset that educational ICT was in effect about computer skills. Although Morrissey advanced the view that an emphasis on skills was warranted at the time O’Conluain conceded that overall the training was disappointing and Leydon was critical that there was no adjustment once it became apparent that the approach taken was not effective. Oldham and others articulated the sense of a missed opportunity: that the skills based courses were needed, but they were not sufficient and there was need for a greater level of progression and development within the training provided. Morrissey however drew attention to the high numbers of teachers who participated both at the initial stages of Schools IT2000 and in subsequent years. He viewed this as an achievement for his agency and as a positive reflection of Irish teachers:

the drive and the pressure for ICT type training for teachers... it was quite incredible, we were bounced forward actually... and we wound up by the end of that year putting over 8 and a half thousand teachers through a training course running in education centres. In general we put about 10, 11 thousand teachers through these programs every year. That's phenomenal, a fifth of the teaching cohort, you know, and in international terms that's amazing because not alone for participation rates but the fact that they take this out of school time, that's exceptional, and that always raises eyebrows in Europe.

During the course of their interviews Drury, Fitzpatrick, Hallissey and Galvin advocated a more localised school based approach involving greater devolution to the Education Centres. Drury was critical of, as he saw it, the overly centralised approach employed by the NCTE. In contrast to the ‘one size fits all’ model employed Drury saw the need for a menu of training and for the utilisation of SIP as a vehicle for identifying appropriate professional development which once identified could be provided to other teachers. Drury was strongly of the view that what was provided to teachers constituted ‘training’ and expressed a desire for a professional development model encompassing school and classroom based reflection by participants, stressing the significance of ‘concrete experience.’ Hallissey echoed these views identifying the need for multiple forms of professional development involving greater localisation and based on a partnership approach to provision. Leydon saw what was enacted as ‘a mass training exercise’ and that a ‘slower and gradualist approach may well have got more teachers on board at a deeper

level of engagement.’ Some interviewees saw the inclusion of some form of assessment as a means to focus and consolidate participant learning.

The centralised approach noted by Drury was also evident in the model adopted for the ‘trainers of trainers’ whereby those selected to provide training to teachers came together prior the commencement of the courses. O’Cannain outlined how it became evident at this stage that there was a lack of clarity regarding the detail pertaining to these courses:

I visited the course taking place and I could hear some of the people who were involved in the organisation, saying what will we do next... you know, and this was a week’s course, a four day’s course, and they didn’t know what they were going to do next.

Knox attributed this to the lack of direction from the DES and from the Schools IT2000 policy document with the INTO and UL becoming the major influences and drivers in respect of training policy. O’Broin outlined how the training provided to trainers was minimal (being completed with a week) with little vetting of those who had volunteered, with the result that some of the tutors were not as confident as some of the participant teachers. Guilmartin reflected that there may not have been a standardised approach or level of depth across tutors. O’Broin, O’Cannain and Galvin all detailed logistical issues relating to the delivery of the courses due to inappropriate environments and issues related to the availability and suitability of hardware. O’Cannain went on to outline how these issues were due to the fact that there had not been a proper inventory of what was available against what was required in each training location. O’Broin bemoaned the level of auditing which took place over the course of the training programme and estimated that one third of the course rolls which maintained records of the attendance of teachers were never kept or lost somewhere in the system. He attributed this laxness to the ‘mad rush’ where the priority was to ‘get the numbers’ through the training process with issues of quality a secondary consideration. This was also reflected in the lack of attention to ongoing evaluation detailed by a number of interviewees.

Summary

Overall interviewees were measured in their assessment of the effectiveness of the teacher training strand, most were of the view that it may have brought some teachers to a level of ICT skills but that it did not provide a vision of how to use it in the classroom, and hence it failed to impact positively on their day to day work. Knox summed it up as ‘a bit of a

scattered approach... a lot of bums on seats... but there was nothing critical about what the actual teacher might do when they were back in schools.’ Echoing view expressed by others regarding what might have been more effective he drew attention to the desirability of ‘bigger teams and trainers put together out of education centres... more closely monitored... and less worry about the amount of stuff.’ Similarly Bhreathnach described the training as ‘hit and miss’ emphasising that equipping teachers with computer skills did not necessarily mean that they were able to transfer those skills to a teaching or learning context.

Strand 3: School Support/SIP

The Schools Integration Project (SIP) formed the major element of the third main policy strand – the School Support Initiative (SSI). Under Drury’s initial proposals SIP was to be a main strand in itself before it was later repositioning as part of the School Support strand. In this context Drury reflected the view that SIP would have been more useful if its purpose was to ‘identify a model which could be effectively rolled out more broadly’, rather than as an element of a mass roll-out strategy. He saw SIP as being the means to seeding activity in schools, to documenting what was achieved and to eventually rolling out successful activity. This view was echoed by a number of interviewees including Leydon who in general terms viewed pilot projects as a political stopgap to ‘appear to be doing something’ but viewed SIP as being an exercise of genuine substance: ‘SIP wasn’t politically expedient, it was really meant to be a genuinely fact-finding type of exercise, model-building exercise.’

SIP was to consist initially of forty projects selected by a group of evaluators on the basis of proposals submitted ensuring that there was a geographical and cross-sector (primary and post-primary) spread. This framework was modified due to the desire by the Minister for Education Michael Martin to include all schools who had applied with the result that SIP came to consist of four hundred schools organised into clusters. Mulkeen referred to this as ‘policy driven by the fear of bad publicity... we don’t want schools complaining, we want everyone to go away happy, so therefore we want to draw in as many people as possible.’ Although Galvin viewed SIP as ‘*the success story*’ of Schools IT2000 he saw that as a consequence of this increase ‘it became unwieldy in terms of the number of projects’ and Knox, who was the National Co-ordinator for SIP acknowledged that this was

indeed the case, due to political pressures: 'I'd do it all over again... I wouldn't let it get as big as it got... I was driven by the Department there again.' Galvin also commented that it was slow to start up, explained by Knox as being due to the NCTE having other priorities as it found its feet during the initial stages of implementation. Galvin described successful SIP projects as getting into the woodwork of schools and changing the ways in which it approached the use of technology, although he acknowledged that this did not happen in every case.

In general interviewees viewed SIP as having great potential (O'Conluain for example referred to it as 'a fantastic idea') with some projects producing good work, but identified a number of weaknesses including the pilot project structure which meant that certain projects especially those of a highly technical nature were not designed for or amenable to replication. Concerns regarding replication were expressed most strongly by Mulkeen who was of the view that non-replicable projects were inappropriate in the context of a national strategy, as they served to create inequality. He outlined that:

some of the projects were very heavily technically based, they were based on a technical infrastructure that most schools can't afford. And so they acted as showcases but not replicable showcases...it was that replicability that I think was the big weakness of them.

Mulkeen also expressed concerns regarding the curricular relevance of such projects and their potential to be sustained outside of a supported project structure. This view was supported by Guilmartin, Oldham, Leydon and Knox who attested to the significant work invested by teachers unlikely to be sustained outside the bounds of such a project.

Issues regarding evaluation and dissemination emerged strongly in respect of SIP. A number of interviewees criticised the nature of the evaluation which took place with Drury and O'Broin drawing particular attention to the failure to build ongoing evaluation into the project structures. Drury saw this as a consequence of a short-term focus where the emphasis was on delivering the project and 'being able to say it was happening' as distinct from a longer term focus encompassing the gathering of data to inform future planning. Drury was mindful of the need to plan for and incorporate evaluation from the beginning as 'you can't go in afterwards and evaluate something like that because you're evaluating a product rather than a process; the process has already run its course.' However O'Broin outlined how in his experience the evaluation was always behind and took place after the

projects had finished with some key personnel no longer available to contribute. In the draft versions of the policy Drury envisaged that each project would be linked to an academic institution whose intended role was to support evaluation and bemoaned the fact that this did not feature in the version of SIP as implemented. Morrissey on the other hand reflected that SIP was ‘really good and very strongly evaluated in many ways’ drawing particular attention to the outcomes of a value for money audit.

Whilst interviewees identified concerns regarding the nature of SIP evaluation they raised further concerns in respect of how the evaluation was disseminated. Galvin who compiled an evaluation based on the proceedings of a SIP conference believed that it was never properly disseminated and as a consequence ‘an awful lot of the message was lost.’ He criticised in particular the delay in publication by the DES, attributed to a breakdown in the relationship between DES and NCTE personnel at the time. The failure to disseminate was also highlighted strongly by Bhreathnach, Guilmartin, Leydon and Oldham. Leydon saw the shortcomings in respect of evaluation and dissemination as symptomatic of a general system level weakness regarding the capacity to evaluate and ‘identify what is working to the broader community.’ Bhreathnach, Hallissey and Marshall all viewed the impact of SIP as having been effected by the poor dissemination of the work completed.

Whilst the majority of interviewees addressed shortcomings with respect to evaluation and dissemination some also pointed to the lack of a second or follow-up stage as limiting the potential to build on the work and outcomes from the initial phase. Marshall saw SIP as ‘fantastic teacher implementation projects, but they all were pilots, again an Irish problem, we do all pilots but we don't take it to the full impact.’ Knox outlined how SIP had created a group of forty to fifty project leaders who had developed expertise which should have been capitalised on by extending to a second phase and implied that the failure to do so was a major disappointment. In similar vein Galvin identified this as a major shortcoming of SIP and reflected that the ‘impetus is gone’ implying that the progress made was lost as a consequence.

Summary

The initial scope of the SIP project in terms of participant numbers was increased as a consequence of the political imperative. This increase had a knock-on effect on the

management of implementation. Although a number of interviewees viewed SIP positively some drew attention to the perceived limitations of the pilot-project based approach. Curriculum relevance was viewed as an issue in respect of some projects. The issue of sustainability also emerged in relation to whether certain projects could survive without the project structure. The nature of evaluation and the resultant dissemination were also strong themes emerging in respect of the SIP project. A number of interviewees saw the failure to put a second ‘follow-up’ phase in place as an opportunity lost and hence a major shortcoming of the SIP initiative.

Strand 3: School Support/IT Advisors

Support in using ICTs across the curriculum was to be provided by a network of IT Advisors based in the Education Centres and by an online portal entitled Scoilnet. Along with SIP these elements formed the third main strand of Schools IT2000. The following section details interviewee perceptions of the pedagogical support provided by means of the IT Advisors.

Interviewees detailed that initially there were to be twenty IT Advisors but that this was extended so that each Centre had an IT Advisor in situ. O’Broin outlined that this was partly to do with ‘a philosophy of the Education Centres’ whereby they all aspire to be treated equally and to have similar facilities available. Notwithstanding this increase interviewees expressed the views that there were too few IT Advisors to cover the number of schools in the State and that on average each Advisor was serving two hundred schools. Marshall described this as ‘a ridiculous model’ in terms of scale and Morrissey whilst addressing other limitations saw the underpinning model as flawed: ‘the idea of expecting twenty people to take care of the needs of four thousand schools, albeit it broken into clusters, was a daft idea in the first place.’ As a consequence many IT Advisors, and especially those with bigger catchments, were seen to be overworked and stretched in attempting to address the needs of all schools, both primary and post-primary, in their catchment areas, with the result that many schools never saw them or knew off their existence. Leydon was strongly of the view that the provision of one Advisor was insufficient and argued for teams of two or three in each Centre. She argued that this was a consequence of shortcomings with respect to planning and that an Advisor for each of primary and post-primary would have added greatly to their capacity. This view was

supported by Galvin who saw one primary Advisor, one post-primary Advisor and one technical Advisor in each location as a more ideal model. O'Conluain on the other hand saw that 'scale wasn't the issue' and drew attention instead to what he described as 'a question of quality' in respect of the shortcomings of the Advisor service. He questioned how many of the Advisors 'added value' as 'they were swanning around talking about ICT to principals, they weren't really engaging with the classroom floor' and identified 'their management', 'the definition of their work' and 'the monitoring of their work' as the more significant issues.

Interviewees detailed that there was a delay in the appointment of IT Advisors and that they arrived too late to be most effective. Mulkeen outlined that schools had already been in receipt of funding for two years and that patterns regarding spending and usage had already been established at the school level prior to the arrival of the IT Advisors. He went on to note how the rigidity of established school practices would have impacted on the work of the then incoming IT Advisors:

Schools had already got the money, in some cases got two years' money and internet connection before an IT advisor appeared. And that meant that whatever patterns were going to be established were already established...so it's like, we give you a grant to build a house, and when you've built it we send around an architect to advise you on how to design and at that stage it's gone, the patterns are established. And schools are quite rigid once a pattern gets established... somebody's timetabled, somebody owns the computer room and it's very hard to change that.

Galvin and O'Cannain also saw this delay as an issue with O'Cannain pointing out that in the absence of IT Advisors schools turned to commercial suppliers for advice. This delay was attributed to administrative delays within the DES as 'there was no precedent for that kind of person' (O'Broin) and to the nature of the appointments process, which Galvin described as 'far too complicated.' Galvin who was involved in this process viewed the range of possible candidates for these positions positively although a number of others including Kelly, Mulkeen and O'Cannain expressed concern that appointments as IT Advisors may have been based more on technological rather than on educational competence. O'Cannain in particular felt that the selection of ICT advisors had more to do with their competency in ICT than with ICT in teaching and learning across the curriculum. Those appointed were employed on short-term contracts and Guilmartin detailed how some

‘good people’ gave up their positions and went back to school based roles as a consequence of the uncertainty which ensued on a year to year basis.

Issues in relation to the specific role of the IT Advisor came under scrutiny from interviewees with many outlining how there was a lack of clarity as ‘there wasn’t a basic job description’ (Galvin). Guilmartin questioned some of the possible roles:

Were they a technician? Were they an advice centre? Were they to visit schools? Were they to run courses? Were they to set up the website? The answer to me, looking at them, I don’t think they did know.

He went on to state that in his experience most IT Advisor work was in respect of organising courses for teachers, providing support groups, responding to telephone queries, administration (‘filling out forms’) and ‘going out to a certain amount of schools.’ Mulkeen also referenced their role in respect of administration and expressed regret that some had been drawn into a lot of bureaucratic work, spending up to three days a week on paperwork. Whilst Mulkeen made reference to the ‘educational vision’ he went on to question whether there was a shared vision amongst IT Advisors in respect of ICTs in education, linking this to the lack of clarity regarding their role and to his perception of their backgrounds as being mainly ‘technology enthusiasts.’ Morrissey reflected the view that most of their work was in respect of running courses and visiting local schools although acknowledging that in the bigger catchment areas ‘schools wouldn’t know them that well.’

The decision to base IT Advisors in Education Centres with a view to providing localised support was generally viewed positively although the manner in which this arrangement was enacted drew attention from a number of interviewees. IT Advisors were based in Education Centres but employed by the NCTE, and the details of this arrangement were not clearly negotiated prior to their appointment. Galvin attributed the lack of negotiation to ‘the fact that everything was done at such a gallop’ and that whilst Centre Directors were informed that they would be receiving the infrastructure to house such a person:

it was never clear in the first discussion who the person would report to and you then had the very potentially explosive situation where you had somebody based in the Centre who was not technically reporting to the Director of the Centre... who was working out of the Centre as a kind of free agent and reporting to NCTE in Dublin. Now in the main it worked out well because these were sensible people, a lot of them knew their local Centres, they could get on well enough with the Directors but there had been a couple of deeply problematic outcomes that resulted directly from that decision.

Knox viewed this arrangement as unsatisfactory from the point of view of achieving the NCTE's remit, and acknowledged that the lack of clarity regarding the relationship between the NCTE, IT Advisor and Education Centre Director created tensions in some cases:

they [Educational Centre Directors] had to employ ICT advisors, which were actually employed by the NCTE to a job spec that was developed by us, but were actually being paid for through Schools IT 2000 but actually reported to the Education Centre Director.. while we were paying the bills, they were reporting to a third party. That was unsatisfactory, I think. Now, that may be just a political statement, but it was... ultimately, we felt that in order for them to implement the work that we wanted them to do they should be reporting directly to the NCTE... when in fact they were under the direct control of the Educational Centre Director.

Morrissey described the arrangement as 'a classic ménage a trios in managerial terms' and went on to detail aspects of the difficulties he experienced in monitoring their work:

They were answerable to the Directors of Education Centres, and they were supposed to be dancing to our tune which was crazy. I made sure I met them 8 times a year... I had to try and get a business plan from them. But they could have always said to me... well you know, we're not part of you, we answer to our Directors, and I was told that many times. And they might be doing something that the Director wanted them to do, or a European initiative... they might be over in the Hague.

Kelly and Leydon amongst others detailed the 'rows' and 'confusions' which arose as a consequence of the management arrangement which ensued. Whilst the relationship between Education Centre Directors and IT Advisors can be described as fraught in some of the examples cited by interviewees it was also outlined how the presence of the IT Advisor brought status and facilities to Education Centres although requiring extra work on the part of the Centre Director.

Whilst the lack of clarity regarding role and issues related to management were accepted as factors a number of interviewees outlined the view that the body of Advisors could have been more productive than they actually were. In general these interviewees accepted and concurred with the findings of a value for money audit which recommended discontinuation of the service. O'Conluain described them as 'an abysmal failure' stating that:

Their role wasn't defined well enough in the beginning... but more importantly they weren't managed, they had a license to roam and from talking to principal teachers myself, and other teachers, they didn't want to get their hands dirty in schools providing technical assistance. So a lot of them were swanning around.

Hallissey also acknowledged the lack of a clear brief and saw the fact that the NCTE did

not management them directly as a ‘fundamental mistake’ but went on to address how in his view the IT Advisors themselves ‘didn’t help their cause’ as ‘some of their behaviour and their activities were questionable.’ He went on to outline how the service had not been implemented as he had envisaged:

This group of people, they should have been very highly motivated, professional learners themselves, constantly updating their own skill-set... there was a little bit of waiting to be told what to do, and I think they never had a clear brief in terms of what their job description was... being managed by two masters didn't help their case, they should have been managed centrally by the NCTE, they should have been located in Education Centres yes, but many of them became... you know, deputy Directors of Education Centres informally, and that was the ultimate... failing with the service, it was not developed, it was not monitored properly, and then all of a sudden it was just taken away.

Morrissey expressed the view that the Advisors were not a significant loss ‘operationally’ to the work of the NCTE and emphasised issues related to their role more so than related to their management. Given the opportunity for another iteration of such a service he envisioned more of ‘a strategic role’ involving the writing of digital content and model case studies of good practice indicating a preference for a more centralised model with less emphasis on localised support needs. However Hallissey viewed that the NCTE did not understand the role of the IT Advisor and that as a consequence did not see any loss accruing from its discontinuation and hence was happy to support this decision.

Summary

Interviewees were somewhat positive towards the model for the IT Advisors but addressed a number of shortcomings in its implementation related to critical mass, lack of clarity regarding role and issues related to management. Whilst it was acknowledged that some Advisors did interact usefully with their schools there was a general view that for these and other reasons the potential of this model of support was not realised. The delay in appointment of the IT Advisors was also seen as serving to limit their effectiveness at the school level.

Strand 3: School Support/Scoilnet

In addition to the support provided by the network of IT Advisors the online portal Scoilnet was to provide resources and advice for teachers. Initially Scoilnet was administered by the NCTE and there was an expectation that teachers would provide curriculum relevant resources which could be accessed and used by other teachers. However this did not play

out as intended and interviewees identified the paucity of resources and lack of updates as curtailing the usefulness and relevance of Scoilnet. Mulkeen saw it as falling between two stools as on one hand it was orientated towards locally produced materials (as distinct from indexing existing resources and mapping them onto the curriculum) but on the other it was not commissioning production of such materials with the result that:

What came in was fairly low grade material, and it wasn't consistent enough, it didn't map onto the curriculum enough, it was patchy here and there, so there wasn't enough of an incentive for people to use Scoilnet, and I would guess that the real usage of Scoilnet in the classroom was pretty low.

Guilmartin outlined how in his view Scoilnet never reached its potential and drew greatest attention to the fact that it was not updated on a regular basis. Galvin, Guilmartin and Oldham all outlined how Scoilnet had been through a number of incarnations including a stage when it was overseen by Intel. Guilmartin saw Intel as benefitting commercially from being involved with the NCTE and viewed the NCTE as gaining from Intel's technical expertise. However Galvin saw giving it over to Intel as taking away from its independence as a source of advice and guidance and Turpin in his role as Intel Education Officer at the time detailed tensions between the DES/NCTE and Intel with respect to the running and ownership of the content placed on the portal. He outlined how various officers in the DES had varying degrees of anxiety about being close to a commercial entity: 'they were always worried that there was some commercial angle to this that they didn't see' which led to frustration and ultimately a breakdown in mutual trust. Kelly from the DES perspective corroborated this version of events and Turpin detailed how eventually Intel wrote off €3 million of investment and returned ownership to the NCTE. Whilst Scoilnet may have 'looked better' as a consequence of Intel's involvement Oldham commented that, in her experience, it was no more useful following its makeover, due mainly to a lack of content. Whilst interviewees reflected a level of disappointment with the manner in which Scoilnet fulfilled its perceived remit in respect of guidance and support others especially Kelly and Wall viewed it as a stepping stone to developing a learning environment at a national level.

Summary

Scoilnet was an online portal intended to provide resources and advice to teachers. Interviewees saw that it achieved its remit to limited effect due to a lack of updated content linked to the manner in which it was administered at varying stages of its existence.

Strand 3: School Support/Technical

Interviewees identified the lack of provision for technical support as the major shortcoming in respect of policy implementation. This was attributed directly to the costs involved which were viewed as prohibitive. Mulkeen outlined how based on a rough calculation the provision of one technician for every ten schools would have cost £40 million pounds, the equivalent of the entire budget for Schools IT2000 over the three year period, and that the provision of technicians would have entailed a long term commitment which was not in keeping with Government spending. Drury explained how the provision of technical support was never seriously considered as part of his work on the Steering Group as there was never any sense from the DES that this could be funded. He concluded that 'it's probably fair to say that in some ways that issue wasn't really met head on, it was avoided.' Kelly and McLaughlin advanced similar rationales for this avoidance outlining how, in the words of McLaughlin 'we were starting from nothing, and the tendency was to get the technology in and to think about the maintenance after.' Kelly outlined the thinking that this would happen in the 'next phase' but acknowledged that this was flawed as it did not happen at that stage either. McLaughlin went on to acknowledge that there was a tendency to 'rely on the volunteer thing' to too great an extent and that this became impractical once school infrastructures became more sophisticated. O'Conluain saw the lack of technical support provision as 'a mistake' detailing that there was a 'dire need' for it on the ground. He acknowledged that the lack of this provision was a counterpoint to teachers' enthusiasm with a detrimental effect in the long term:

If you engender some enthusiasm and the teacher's concerned ran into a technical difficulty, and nothing could be done about that, then you kill that enthusiasm... and that happened.

In the absence of technical support interviewees outlined how schools made local arrangements, commonly availing of 'free' technical support from the point of purchase. Both Galvin and Mulkeen addressed the inadequacy of the telephone helpline which was run out of the NCTE during the early stages of implementation whilst Galvin suggested the need to consider alternative models of support including a national qualification structure at certificate or diploma level for technicians. Bhreathnach detailed how schools, in the absence of information and guidelines, were initially unsure what the grant could be used for although Knox referred to the purchasing guidelines as specifying capital expenditure which excluded technical support. Leydon detailed how the Minister for Education Michael

Martin, speaking at a briefing in the DES, outlined how SIP would be a vehicle for identifying models for such support although this was strongly rebuffed by Knox as ‘a political answer’ given that very few SIP projects (other than three possible examples) were addressing technical support issues.

Morrissey described technical support provision as a ‘big issue’ and detailed that ‘the State wasn’t prepared to invest in it’ especially post Schools IT2000 when the availability of funding was curtailed due to economic recession. As a result schools were still expected to make their own provisions:

we were looking for 50 something million a year to fund that at a time when there was no funding at all for hardware in schools... and it was a big investment and I suppose there was this belief that maybe schools can handle something themselves locally... back to the old style attitude. But it is a big draw, it is a big issue. Alleviated a little bit in a strange way by the fact that all new technology bought now is being bought with three year warranties and high quality warranties, and the newer the cohort of equipment out there, the less...you still have networking maintenance to carrying out, still systems maintenance to carry out, and schools just have to do their own thing.

Summary

The lack of provision for technical support was identified by interviewees as the major limitation in respect of policy provision. This was attributed directly to the costs involved and was seen to effect use by teachers at the school level.

Perceived Outcomes from Schools IT2000

The following section will address the perceptions of interviewees regarding overall outcomes or achievements as a result of the enactment of Schools IT2000.

In general interviewees cited the provision of infrastructure, the up-skilling of teachers and the SIP projects as the most positive outcomes from Schools IT2000. In addition interviewees saw the provision of a formal policy and its related structures (in particular the NCTE and the network of IT Advisors based in Education Centres) as giving ICT a profile it had not enjoyed previously and as having raised and increased awareness regarding the educational potential for ICTs. Whilst drawing attention to these outcomes the majority of interviewees outlined the view that overall impact at the school and classroom level was minimal.

Wall described Schools IT2000 as a ‘shock troop’ to the system in which ‘money flowed’ and technology and support went into schools causing greater engagement by school based personnel. Morrissey saw this investment as having established a ‘baseline of equipment’ that was not there previously. Kelly and O’Conluain amongst others emphasised the training dimension. O’Conluain saw that it had up-skilled a lot of teachers in basic ICT so that they were in a position to use it personally and also as a tool in the classroom whilst at the same time providing an outlet for ‘a small number of purists’ really committed to ICT in teaching and learning. Guilmartin, Oldham and Bhreathnach also indentified the equipping of schools and the provision of training as positive outcomes and went on to detail a heightened profile as a result of this policy initiative. Guilmartin saw the ‘significant investment’ as evidence of the ‘Department of Education really coming in behind IT’ and viewed the establishment of the NCTE along with the Education Centre involvement as key developments. Oldham highlighted how SIP had ‘created a buzz’ although it had ‘run into the sand’ and flagged how raising ICT to the policy level may have given it profile but served to contribute to fragmentation within the system generally:

What did this achieve? It did achieve infrastructure, it did give a profile....it did lift to policy level things that had been done below official documented policy level earlier....the possible downside is the losing of the taking responsibility at other levels, there was a tendency, for example when we were looking for money for computer theory for teacher education, the Department would tell us to go to the NCTE, and they didn’t necessarily have the money, but there was a hiving off of responsibilities, and then there’s the question of what comes afterwards....so yes it facilitated a lot of good work, as such things do...up to the level, to some extent, but as tends to happen, we’re suffering from the end of it at the present.

Bhreathnach in addition to flagging infrastructure and teacher training drew attention to how Schools IT2000 ‘raised consciousness in school management, and among teachers of the potential of ICT’, a view shared by O’Cannain who went on to outline how, in his experience ‘there’s a far better sense of the role of ICT in learning’ and ‘you’d have a lot of teachers now, compared to what you used to have, who would be quite knowledgeable.’ Mulkeen provided the following summary of the outcomes in respect of infrastructure, training and profile as identified by many interviewees:

What was achieved was putting ICT on the map, the equipment in schools, connectivity in schools, basic training, big increase in skills and putting ICT on the policy map so that it appeared on the NCCA radar, it appeared on the primary school curriculum, and so on.

Galvin also drew attention to a heightening of the profile of teaching and learning technologies in schools and saw the emergence of NCTE as the most significant outcome of Schools IT2000 but bemoaned the negative influence of the ICT Unit in the DES in capitalising on the progress made. According to Galvin the NCTE gave ‘a dynamic agency like approach to IT’ for a couple of years but that this was followed by ‘total disintegration and the whole thing falling apart’ due largely to certain ‘cynical’ appointments to the ICT Unit who lacked the understanding, vision and leadership to progress the ICT agenda.

Drury concurred with other interviewees that as a consequence of Schools IT2000 teachers possessed a much greater level of IT skills than they had previously and that infrastructure had improved in both schools and Education Centres but questioned how much impact these factors made at the school level. Reflective of the competing innovative and social practice type discourses he went on to outline how in his view policy was deficient as it has tended to focus on putting technology in place rather than on the learning that was to take place as a consequence and that:

in terms of making change happen... it focuses on learning, it focuses on what’s going on in the classroom... it doesn’t try and put in the bits around the sides, it goes to the core and then puts in the bits that support the core, I think very often policy has been deficient because we’ve say... OK, we need to have broadband connections to make this happen...

Mulkeen whilst highlighting the provision of policy structures outlined how in his view overall utilisation was disappointing and that Schools IT2000 had served to support schools in doing what they were doing already rather than causing or acting as a catalyst for more significant changes in direction. Mulkeen cited how post-primary schools were already using ICT to teach basic skills and that the funding provided enabled them to do so in a more sophisticated way and for more students. He saw integration as happening mainly in the context of the SIP projects and concluded that if integration was limited to only those schools involved in SIP then the level of overall impact was limited. Galvin viewed SIP more positively describing it as ‘*the success story*’ of Schools IT2000 but bemoaned the failure to capitalise on this fully due to poor dissemination and the lack of a follow up phase: ‘If the energy and creativity of SIP schools could have been better channelled and better directed towards the production of lessons-learnt and an evidence base for ‘what works well’, and these systematically fed back into the system, a lot more value would have come of it all.’

A number of other interviewees including Leydon, O’Cannain and O’Conluain made reference to the perceived impact of Schools IT2000 at the school and classroom level reflecting the view that implementation was ‘patchy.’ Both Leydon and O’Cannain drew particular attention to the effect of the school and teacher context in respect of implementation. Leydon acknowledged ‘some fantastic stuff going on’ but detailed the need for a greater understanding of the factors which impact on use at the school and teacher level vis-à-vis the dynamic of change. Similarly O’Cannain described use or implementation as sporadic and variable across individual schools, depending on teacher interest:

Now how well it’s integrated, how well it works, is a matter for individual schools, it seems to me, you know. You’d have a lot of teachers now, compared to what you used to have, who would be quite knowledgeable, some doing interested in doing serious work with their kids, but sporadic and much more prevalent in primary schools than in post primary...

O’Conluain whilst acknowledging a ‘petered out’ of interest post Schools IT2000 referenced ‘a lot of excellent practice out there in schools in pockets largely due to the catalytic effect of IT2000 and its legacy’ whilst McLaughlin saw that ‘an awful lot may have depended on the leadership role of the principal, whether they pushed it on individual teachers.’ Turpin described what he perceived as a lack of any meaningful follow through on the commitments made and that as a consequence implementation was ‘fudged.’ He saw that teachers were exposed to the possibilities and noted ‘pockets of excellence’ but rated the overall effectiveness as poor in terms of the impact on the educational experiences of students.

Overall interviewees detailed little evidence of the impact of this policy, other than in respect of infrastructure or teacher training. For many the policy itself and the associated structures were viewed as the main outcomes. As outlined above impact at the school level was seen in general terms as ‘disappointing’ or ‘sporadic.’ However Knox asserted the view that any assessment of the effectiveness of Schools IT2000 should only be made relative to the framework or criteria outlined in the policy document and that intentions towards integration were aspirational with no specific targets sets. Knox went on to outline how the targets set, were in his view achieved, although acknowledging that there were no quantifiable targets for integration, and little by way of guidance and specifics in the framework document generally:

Ultimately the Schools IT2000 too has to be judged against the framework under which it operated and what they were looking at I suppose... ultimately... line for line, point for point, the Schools IT2000 delivered what it said it was going to deliver in that framework document. Scoilnet existed. You know... Everything that they said they'd do, they did. They spent the money and put the computers in the schools, and all of those things, so you'd see why on a statistical analysis... But the targets that were set for it, you see... that's the question, and there's very few targets set for integration...

Summary

Interviewees perceived that the main impacts arising from Schools IT2000 were in respect of the provision of infrastructure to schools and the up-skilling of teachers in terms of basic skills. Many interviewees saw the provision of a formal policy and associated structures as an end in its self. The impact at the school and classroom level was seen as 'patchy' with interviewees reflecting little evidence of positive system wide implementation.

Evaluation of Schools IT2000

Interviewees raised issues at the system and NCTE level in respect of the capacity for evaluation and dissemination of the associated outcomes. Related to this interviewees distinguished between the quantity and quality of evaluation in respect of Schools IT2000 both internal and external to the NCTE and drew attention to the work of the NPADC in respect of the 'official' external evaluation. The perceived 'political' dimension of the official evaluation also emerged from the interview data.

Galvin, Hallissey, Leydon and Mulkeen all addressed perceived limitations with respect to evaluation and dissemination within the education system nationally which were seen to manifest themselves at the organisational level in respect of the NCTE. Leydon noted that 'the government has no capacity to evaluate, review, mainstream or bring to the attention of the broader community what is working and what's not' and Galvin drew attention to particular shortcomings in respect of the lack of dissemination mechanisms. At the organisational level in respect of the NCTE Leydon advanced the view that 'the organisation lacks the capacity to evaluate properly what it's doing, and therefore to make proper changes.' Drury and O'Cannain related this to its operational focus in response to ministerial pressure, where the focus was more on short-term delivery of the policy strands rather than on more long term evaluation and development mechanisms. Hallissey emphasised a formative dimension to evaluation, seen as lacking with respect to the work

of the NCTE, and noted how a change in attitude or perception regarding evaluation would see it as more constructive than judgmental, and thus inform the process rather than judge the outcome:

It needs to be both formative and summative, and the formative starts very early on and it looks kind of... like you're in the middle of the implementation stage, you have some focus groups and they find out pretty quickly what's working and what isn't working, and it's not evaluation should not be a stick to beat the Department or the implementation agency whether it's the NCTE or the NCCA, it's to help them, and we should get over that. I've been involved in a number of evaluations and it's a bit like a gatekeeper, things can go in and things can go out... but it's not really... it's not a true story of what's going on... we need evaluation, and it needs to inform the process, it needs to be an iterative cycle.

Some insight into the understanding of evaluation from the NCTE perspectives may be gleaned from Morrissey who addressed the issue of evaluation mainly from an 'external' perspective detailing how the work of the NCTE had not been evaluated on a singular holistic basis but in a 'fragmented' way across a number of differing reports:

we've probably evaluated individually many many initiatives... and but if you were saying was the effectiveness of the NCTE's work evaluated from a pedagogical perspective, not as a holistic activity. But certainly on a fragmented basis for all the different reports... and we certainly have been evaluated on the value for money audit, for sure. Beyond that no... we haven't gone through any international experts coming over here and seeing what the NCTE does from a pedagogical perspective... And in some ways you did have the Inspector's report which in some indirect way we would see some value for our work.

Morrissey on the other hand drew little attention to the 'official' external evaluation of Schools IT2000 which was conducted by the NPADC - a group formed in the aftermath of its implementation which encompassed representation from the various partners in education. Leydon saw the setting up of the NPADC as a 'sop' to partnership reflecting the view that there was little or no consultation prior to Schools IT2000 and that membership of the NPADC was a form of appeasement for partners who were discommoded by the prior lack of consultation. According to Leydon:

the manner in which the NCTE was set up so summararily [sic] and the people appointed to it...that has engendered a lot of bickering and ill feeling among the education partners that there wasn't much engagement and there was always this feeling that the NPADC was set up just to keep us quiet basically... and I would agree with that, it was... you see we were brought in after the job was done... the policy framework was delivered...

Others saw the chairmanship of the NPADC as a consolation prize for a candidate who was expected by some to have been appointed as Director of the NCTE and Leydon went on to

detail how NPADC meetings were tense and fractious due to the sense of frustration felt by partners who recognised the futility of their involvement at this stage:

we were drafted in after the job was done, and we had no input into where it was really at, i.e. NCTE you know? ... so it was very fractious, very annoying and the sense of frustration... I mean... you had to be there because you had to have your organisation present, but it was a total waste of time, frankly... they were always bickering... It was because we were brought on board subsequent to the deal and also we were no real influence, and that was tangible from the word go.

Leydon saw the evaluation conducted by the NPADC as a form of justification for its existence but regarded it as superficial in nature, collecting only quantitative data which failed to capture what was happening in schools. Oldham questioned whether the NPADC was the appropriate body to evaluate Schools IT2000 and expressed desire for clarity in relation to its exact role whilst O’Cannain highlighted the emphasis on the ‘product’ as engendered by the statistical data collected post implementation as distinct from capturing the process of implementation through ongoing internal evaluation during the life cycle of the project.

Other interviewees were also critical of the nature of this evaluation and saw it as being political by providing statistical data which could be used to justify the policy initiative and to support the related spending. Galvin described it as ‘poorly thought out, poorly conceived and poorly directed’ and highlighted the lack of a qualitative dimension which would have enabled a greater level of analysis and understanding of the impact of the work undertaken:

There’s nothing there that shows any understanding at all of what it’s like to stand up in a classroom and use information technology in a school. And the leaps and bounds that we’ve seen in certain schools over the last couple of years, they’re not represented in that, really. It’s all nuts and bolts. And they’re grand. Figures are grand. Policy-makers need their figures. But I think if you strip back those figures and look at them closely, there’s an awful lot of worrying sub-strands which just aren’t surfaced when you focus on measurable outputs alone...

Turpin in similar vein described it as ‘numbers at nearly every juncture’ but ‘that doesn’t tell you anything about what happens, it just tells you you are bringing a big pipe to the door...[it does not tell you] whether the taps on the inside are any use or whether the water that flows through adds value.’ Galvin and Guilmartin both drew particular attention to the manner in which the evaluation was produced ‘one girl...writing up stuff as it came to her and as she tried to make sense of it’ and in respect of the final write-up ‘there were ten

people producing it and they just slotted it all together.’ Kelly attributed this in part to the level of funding available which limited capacity. Galvin went on to outline how, notwithstanding the political dimension, the quality of the data gathered also impacted on the positive slant of the resultant report as ‘you could only say with confidence the positive stuff, you couldn’t actually say an awful lot that would stand scrutiny on the less successful aspects.’ Guilmartin saw that ‘some of the information was woolly’ but also recognised the political dimension whereby the statistical data presented was amenable to Government spin:

I keep saying about the number crunch... the government if they can stand up and say we have thousands of teachers, they’ve done phase one... nobody know what phase one is but it’s brilliant news.

As a representative of the CESI on the NPADC committee, he echoed the views of Leydon regarding the level of influence of this committee and expressed surprise that as a representative forum it ‘just disappeared off the face of the Earth’ once the ‘official’ evaluation was published.

The tendency to gravitate towards positive aspects for public consumption was also articulated by Mulkeen in respect of the findings of a survey he conducted on behalf of the NCTE outlining that: ‘in part their immediate reaction was to look for the good news in it, and to look for the snippets that they could release to the press and so on.’ He went on to outline that ‘there certainly wasn’t a sense that they were going to look at the critical parts of it and immediately change their policy.’ Morrissey gave a general response in respect of the impact of the ‘fragmented’ evaluation on the work of the NCTE outlining how ‘they all impact in some way and they do give you guidance and support and a sense of direction.’

Leydon was critical of how two evaluation type surveys had been sent to schools simultaneously reflecting, in her view, a lack of communication and fragmentation amongst related agencies: the NCTE and the NPADC. Mulkeen, who was involved in the NCTE survey, acknowledged that this was a ‘pity’ and that there was some but not absolute duplication as the NPADC survey sought the views of management and principals and the NCTE survey aimed to address whole school issues. He went on to detail the difficulty in gathering data regarding integration due to the plurality of meanings as understood by respondents. Overall Mulkeen distinguished between quantity and quality in respect of

evaluation, articulating the sense that there was enough done but that the impact in terms of informing future policy may have been greater:

There was certainly enough done in terms of surveying schools and finding out how much equipment there was and how the money had been spent. I'm not sure that there was enough debate about the higher level strategic issues, about what we need to do next and designing the policy to follow from the evaluation. So where evaluation is a census, it tends to be.... like a census reporting progress, it's the link between the subtleties of that and designing and designing the next strand of policy... that's more shaky. I mean I certainly think that some of the evaluation findings were fed back and had an influence but I generally think that the policy is more politically driven than research driven. And I suppose you could say that in every country too with a political system.

Both Kelly and Wall both saw a role for the DES Inspectorate in respect of evaluation as part of Whole School Evaluation (WSE). Kelly saw the Inspectorate as providing evidence of what was happening in the classroom and detailed how he had lobbied for this to happen at the time of Schools IT2000 as 'there wasn't enough evaluation' or 'accountability' in built, but that this became problematic and did not happen. Wall saw that as a consequence of Inspectorate involvement in the period post Schools IT2000 'we are [now]... in a much stronger space... in terms of evaluation.'

Summary

The capacity for evaluation and dissemination of the associated outcomes was seen in terms of the macro and organisational contexts. Interviewees distinguished between quantity and quality of evaluation related to Schools IT2000 both internal and external to the NCTE and saw that its work may have been more usefully supported by appropriate internal rather than external evaluation. Interviewees drew attention to perceived limitations of the official evaluation conducted by the NPADC which was seen as political in the sense that it provided statistical data which could be used to justify policy and the associated spending.

Follow Up to Schools IT2000

The following section addressed the immediate aftermath of Schools IT2000 which was to run until the autumn of 2001. As a follow up policy, the *Blueprint for the Future of ICT in Irish Schools 2001-2003* (DES, 2001) was launched in December 2001. Interviewees saw the Blueprint as committing more funding so as to, in effect, continue Schools IT2000 without any new specific targets or change in direction, attributed by some to a lack of established clarity regarding the exact purpose or remit for ICTs in Irish education.

Interviewees drew attention to concerns regarding how this policy was produced and the resultant end product both in terms of substance and presentation. The launch of the Blueprint coincided with a change in the Minister for Education, detailed as significant by many interviewees, and accompanied by more DES control of policy and policy implementation in this area.

Galvin detailed the workings of a follow-up 'expert group' consisting of a number of DES Inspectors and educationalists which met a number of times in the autumn of 2001 with a view to developing the Schools IT2000 framework into a fuller policy and expressed regret that this group never finished its work because 'the Department lost direction at that point.' He outlined how 'nothing was ever published or produced out of the work of the expert group... and none of the recommendations, interestingly enough, have gone forward.' The workings of this group may be seen to have been overtaken by the imminent publication of the Blueprint document published in December 2001 although Galvin saw that this was a year too late and 'incapable in policy terms' to take the agenda forward. Many interviewees including Drury, Galvin, Hallissey, Mulkeen, Knox, Marshall, Oldham and O'Cannain expressed disappointment with the Blueprint policy which they saw as failing to build on the work of Schools IT2000 by providing a detailed statement of policy and policy goals for the time period over which it was to run. Mulkeen saw the Blueprint as a funding strategy which only slightly changed the emphasis from pilot projects (SIP) to networking and broadband connectivity 'other than that it was continuing along the same path... effectively it was a continuation of the same plan, so you might as well call it IT2000 rolls on.' Drury remarked that he did not observe 'anything...that I felt was different' and went on to describe the Blueprint as 'a big sort of physical resource provision' with an emphasis on broadband. Similarly Leydon saw it as 'ploughing money into the system' which she viewed as insufficient by itself and Morrissey described it as 'an extension of the IT2000 document. Steady as she goes.' Galvin went on to outline how in his view it continued in the same vein as the previous policy and was a reluctant publication by the DES:

It was the same technicist, limited, PC vision that was embedded in same sort of language, embedded in the same sort of initiatives, embedded in the same sort of activity structure... it didn't take us a step forward at all, it simply held the line. Teaching and learning didn't come into that document any more than it came into the previous one. There's no fresh thinking in it, it's simply continuing the same tired wandering in the wilderness, you know? And that's because it's from the same pen. It was a reluctant publication, lacked vision, and

– very tellingly – it was released over the Christmas holidays when no-one would comment on it...

Oldham detailed that ‘something much more substantial’ was needed at that point, and that whilst the Blueprint document may have sufficed as a brochure much more detail was required so as to build on what was already in place. Both Mulkeen and Galvin saw that there was a lack of focus to the content of the Blueprint document due to a lack of established clarity regarding the purpose of ICTs vis-à-vis the competing economical, personal and pedagogical rationales and that as a consequence there were no firm statements of goals or objectives in the document. Galvin elaborated that ‘in order to have goals and objectives you need to know where you’re going’ and that an open ended approach was potentially deliberate ‘as you’re not setting yourself up for a fall, that’s very civil service in its approach.’

Along with Galvin, Hallissey and Knox drew attention to the perceived limitations of the approach understood to have been taken to the development or writing of the Blueprint within the DES. Hallissey detailed the perceived limitations of ‘one man in a room writing a policy’ stating ‘that’s not a policy, that’s somebody’s idea’ and related the Blueprint as a mechanism for providing more funding according to what was available from the Department of Finance at the time. Knox saw that ‘it said nothing at all. It was a bit like Schools IT2000 except smaller’ and went on to focus on its open-ended nature:

As a blueprint for going forward, I could have written a better one myself... without reference to everybody. When you consider the resources that the Department had at their disposal... it was a disgrace. It’s not a blueprint for anything except maybe a recipe for disaster. That’s all... it’s too open-ended anyway. If you’re going to have a serious blueprint for ICT in education, you need to have a fair idea of what you’re trying to achieve... and not some sort of ludicrous hints at what the future might look like. I was totally dismayed by it. And of course the NCTE is there to implement the policy. That’s in the document. You couldn’t implement that. What are the targets? There’s none... you can’t have a policy statement that’s open ended as that. There’s no beginning, middle or end actually... disgraceful.

Kelly recognised the limitations of the Blueprint as raised by other interviewees but indicated that it ‘took everything that was really good out of the proposals that we had.’ That said he concurred with the reservations expressed by others with regard to focus and substance:

The Blueprint to me was something that was put out just to say we're still interested in IT, we want things to happen but we're not exactly sure what it is or where we're going... the

Blueprint was... it was a blueprint that wasn't really blue... there was a commitment that wasn't a commitment, that was my feeling about it.

The presentation of the document drew attention from a number of interviewees. Mulkeen described it as 'a shiny thin document' and Galvin was exasperated that 'at the end of the 19 months we got 30-something pages and a few glossy photos with only half a page given to teacher development.' O'Cannain and O'Broin addressed the mismatch between the supposed substance of the document with an emphasis on cross-curricular integration and the content of the illustrations which depicted students dismantling a computer and engaging in ECDL type activities. This in O'Cannain's view was evidence of a distinct lack of thinking in respect of the document and O'Broin elaborated by drawing particular attention to the mismatch between the text and the pictures:

then you compare the text of the Blueprint with what these pictures were actually saying, particularly the picture on the cover. Still emphasising the integration of ICT, but there you had, if you examined the picture, these people were dismantling... putting a computer back together again... so the emphasis [was] on skills...

Interviewees drew attention to the significance of the change in the Minister for Education from Minister Michael Martin to Minister Michael Woods, and to the tension which was perceived to have existed between the NCTE and the DES at this time. Mulkeen outlined how the incoming Minister 'wasn't at all as interested as the initial Minister' and that in this context it was fortunate that further funding was committed and a plan produced, albeit one of poor quality. O'Conluain drew attention to the generalisation that 'Ministers are seldom excited about their colleagues legacy' and Galvin saw the moving on of Minister Martin and his team of advisors as part of the 'bubble bursting' and that with the belated setting up of the DES ICT Policy Unit at this time 'you had a regrouping within the Department at that stage...they were taking back what had been taken from them in terms of the initiative in many ways.' As a consequence the NCTE no longer enjoyed the 'golden boy' relationship with the DES as it had under Minister Martin. This view was strongly supported by Knox stating that:

Michael Woods came in and that was a very bad move from our perspective... I don't want to second-guess what happened, but it appeared to me at least that the Department were back in charge whereas the Minister kind of... was running... Michael Martin would tell people what he wanted, whereas Michael Woods, lovely man, very human kind of person, I thought when I met him a few times... but I think that the wheels came off the chariot somewhat, or if I mix my metaphors the brakes were applied, very much. And that's when people began to leave the NCTE and people began to look at their relationship with the

Department in light of the new minister, whether the thing had a future at all. He had no vision at all.

The lack of activity under Wood's Ministry was also reflected on by O'Broin who stated that 'nothing was happening during that first year...we were all feeling that things were drying up or slowing down.' Similarly Leydon described the Blueprint as leading to 'a sense of hiatus' where 'the whole thing is in a kind of vacuum really' with ICT 'of the agenda' in the discourse within the education community. Mulkeen saw ICT policy as being 'in limbo' at this stage with no 'clear statement of what we want to achieve.' However Morrissey regarded the term 'policy vacuum' as overly critical and detailed that even post the Blueprint the NCTE continued its work, drawing particular attention to the continued provision of infrastructure and professional development as there was in effect 'an operational policy' in place carrying on from Schools IT2000 and the Blueprint. Morrissey outlined that:

This was the value of working closely with the Department... it was ongoing, the work was ongoing, you didn't need the most well defined policy to tell you where you were going... I'm not arguing now from a whether you should or shouldn't have policy... so the Policy Unit was established, again we had a good rapport for them and still had unfinished business... you know, along the same lines of activity which were implemented in the two previous policy statements. It didn't cause us to be like rudderless boats out here, the line was very clear... I don't know what our policy could have said... I suppose change our emphasis ... what a policy could have said extra given the fact that we still needed more infrastructure, still needed broadband in schools... might have said a lot about innovation, I'm just not sure.

This take was supported by Wall who reacted strongly to the 'notion that there was no policy' preferring to see the time post the lapse of the Blueprint as 'a policy formulation period' in which there was 'still ongoing investment' with teacher continuous professional development (CPD) prominent serving in excess of twenty thousand teachers per annum. Wall cautioned against focusing on policy 'pronouncements' and that 'there was clearly an articulated policy: we were in the integration business.'

Summary

Interviewees saw the follow up Blueprint as in effect committing more funding so as to continue Schools IT2000 without any specific new targets or objectives. Concerns were expressed regarding how this policy was produced and the resultant end product both in terms of substance and physical presentation. Interviewees drew attention to the change in Minister for Education at the time of its launch and the effect of an incoming Minister who

had less interest in this area of educational provision than his predecessor.

Summary and Conclusion

This chapter has detailed the implementation of Schools IT2000 focusing on the work of the dedicated agency (the NCTE), the implementation of the three main strands and the perceived outcomes. The evaluation of the initiative and the follow-up Blueprint are also addressed.

The NCTE was viewed by interviewees as achieving implementation of the main policy strands relative to the outcomes specified in the Schools IT2000 document but interviewees saw that its work was impacted upon by limited resourcing, short term planning and a lack of clarity regarding its precise role (policy implementation/formulation) which at times resulted in a strained relationship with the DES. The lack of clarity regarding the precise nature of its role can be traced back to the manner in which Schools IT2000 and its constituent agencies were initiated allowing little time for consideration of the associated detail. The nature of relationships between the NCTE and other agencies including the DES and the NCCA at varying stages was viewed as influencing its ability to fulfil its perceived remit.

The approach taken towards infrastructure provision (TII) was viewed as appropriate as it fitted with the culture of schools being accustomed to receiving funding and as it compensated for some of the policy shortcomings, specifically in relation to provision of technical support. However interviewees also identified drawbacks relating to the political imperative which dictated a short term focus with an emphasis on getting the technology into schools to the detriment of planned supporting structures and prior documentation. This was in turn reflected by the purchasing considerations at the school level, being based on economic and technology related considerations rather than on desired educational outcomes. Interviewees saw that generally the provision of infrastructure by itself did not lead to enhanced use across the curriculum as a consequence of limited clarity regarding the teaching, learning and assessment which would result from the use of this newly acquired technology.

Interviewees were measured in their assessment of the effectiveness of the teacher training

strand (TSI), seeing that it may have brought some teachers to a level of ICT skills but that it did not provide a vision of how to use it in the classroom, and hence it failed to impact positively on their day to day work: equipping teachers with computer skills did not necessarily mean that they were able to transfer those skills to a teaching or learning context. The pressure to meet the stated targets in respect of teacher training brought significant pressure to bear on the NCTE driven by the political imperative. Interviewees reflected the view that this allowed for limited consideration of the detail pertaining to the courses and that the provision for post-primary level in particular was limited in scope and approach. As a consequence interviewees expressed the sense of a missed opportunity to positively influence teachers' views and capacities in respect of the educational use of ICTs.

The school support strand (SSI) consisted of SIP, the network of IT Advisors and Scoilnet.

The initial scope of the SIP project in terms of participant numbers was increased as a consequence of the political imperative. This increase was seen as having a knock-on effect on the management of implementation. Although a number of interviewees viewed SIP positively some drew attention to the perceived limitations of the pilot-project based approach. Curriculum relevance was viewed as an issue in respect of some projects. The issue of sustainability also emerged in relation to whether certain projects could survive without the project structure. The nature of evaluation and the resultant dissemination also emerged as issues in respect of the SIP project. A number of interviewees saw the failure to extend to a second follow-up phase as an opportunity lost and hence a major shortcoming of the SIP initiative.

Interviewees were somewhat positive towards the model for the IT Advisors but addressed a number of shortcomings in its implementation related to critical mass, lack of clarity regarding role and issues related to management which in some cases led to tensions between the NCTE and the Director of the Education Centre in which the particular IT Advisor was based. Whilst it was acknowledged that some Advisors did interact usefully with their schools there was a general view that for these and other reasons related to the initiative and skills set of some Advisors the potential of this model of support was not

realised. The delay in appointment of the IT Advisors was also seen as serving to limit their effectiveness at the school level.

Scoilnet was an online portal intended to provide resources and advice to teachers. Interviewees saw that it achieved its remit to limited effect due to a lack of updated content linked to the manner in which it was administered at varying stages of its existence. The involvement of Intel at one particular stage in its life cycle created some tension between the DES/NCTE/Intel with respect to the running of the site and the ownership of the content.

The lack of provision for technical support was identified by interviewees as the major limitation in respect of policy provision. This was attributed directly to the costs involved and was seen to effect use by teachers at the school level.

Interviewees perceived that overall the main impacts arising from Schools IT2000 were in respect of the provision of infrastructure to schools and the up-skilling of teachers in terms of basic skills. Many interviewees saw the provision of a formal policy and associated structures as an end in its self. The impact at the school and classroom level was seen as 'patchy' with interviewees reflecting little evidence of positive system wide implementation.

The evaluation and dissemination of the outcomes from Schools IT2000 were seen in the context of a perceived system level incapacity for such activity. Interviewees distinguished between quantity and quality of evaluation related to Schools IT2000 both internal and external to the NCTE and saw that its work may have been more usefully supported by appropriate internal rather than external evaluation. The capacity for internal evaluation was seen as limited by its operational short-term focus in response to ministerial pressure to meet the targets set in respect of infrastructure and teacher training in particular. Interviewees drew attention to perceived limitations of the official evaluation conducted by the NPADC (in terms of both process and substance) which was seen as political in the sense that it provided statistical data which could be used to justify policy and the associated spending. As such it was perceived as providing little useful formative data which might have reflected what was actually happening in schools and thus inform future

policy. The NPADC itself was seen as political in that it provided a form of appeasement for partners who were discommoded by the lack of consultation at the policy development stage.

Interviewees saw the follow up *Blueprint for the Future of ICT in Irish Education* (DES, 2001) as in effect committing more funding so as to continue Schools IT2000 without any specific new targets or objectives. Concerns were expressed regarding how this policy was produced and the resultant end product both in terms of substance and physical presentation. Interviewees drew attention to the change in Minister for Education at the time of its launch and the effect of an incoming Minister who relative to his predecessor had little interest in this area of educational provision.

Overall Summary of Key Findings Relating to Policy Development, Influences and Implementation

The following section aims to provide a succinct summary of the key findings relating to policy development, influences and implementation as detailed over the course of chapters 5, 6 and 7. Reflecting this structure, points 1 – 6 relate to policy development, 7 – 15 to policy influences, and 16 – 24 to policy implementation and outcomes.

1. Schools IT2000 arose out of the work of the DES ICT Steering Group appointed by the then Minister for Education Niamh Bhreathnach to propose a policy initiative in this area of educational provision.
2. The policy development process was characterised by a tight timeframe as there was a clear sense of urgency at this time regarding ICT policy for schools. Uncertainty regarding the availability of funding meant that the scope of the initiative was initially unclear. This coloured the development stage with significant funding (£30 million) only committed at a stage when most of the deliberations by the DES ICT Steering Group regarding potential policy directions had taken place.
3. The work of this group was underpinned by an understanding of the challenges associated with the educational use of ICTs and the proposals considered advocated an incremental rather than system-wise approach to roll-out, the desirability of a training needs analysis for teachers and the need for curricular revisions to support implementation at the school level thus implying a key role for the NCCA.
4. Whilst the key elements of policy and the structures considered by the DES ICT Steering Group remained relatively constant over the developmental process (aside from the changes

in associated terminology or nomenclature) there was some adjustment to these proposals by key figures from within the DES who had the responsibility and authority for finalising recommendations to the Minister for Education.

5. Most significantly this led to a policy based on a system-wide rather than on a phased rollout with the emphasis on the provision of infrastructure and basic teacher skills rather than on the establishment and replication of worthwhile practice by seeding activity in some schools.
6. This resulted in an approach to policy implementation somewhat at odds with the proposals considered by the DES ICT Steering Group reflecting a less sophisticated perspective on the conditions necessary for ICTs to impact at the school and classroom levels.
7. The initial drive to implement technology within education was borne out of pressure from outside the education community with the business/industrial influence being particularly significant. A number of European initiatives and the Information Society Commission were also influential at a time of greater openness to ICTs within the DES. Ireland's poor ranking in terms of readiness for the information age struck a chord with DES personnel where internally the drive for technology originated from the administrative side of the Department.
8. Heightened levels of DES attention to ICTs in post-primary education were influenced significantly by a 'political imperative' to introduce technology into schools so as to be active and progressive in this area of educational provision. The interest and influence of Minister Michael Martin and his advisors is a significant aspect of the political imperative. This political imperative was influenced and driven by forces external to the field of education and premised on the basis of an economic rather than educational rationale. This imperative resulted in, amongst other factors, a short term focus and an emphasis on the achievement of quantitatively measureable outcomes e.g. numbers of computers in schools and numbers of teachers trained.
9. The Computer Education Society of Ireland (CESI) was prominent in lobbying for technology in schools during times of limited interest and resources but was not consulted at this time when attitudes towards technology in schools were changing. This is reflective of a general non-adherence to partnership and consultation as expedience was the overriding priority.
10. Policy development and implementation have also been influenced by multiple contexts with the macro or systems level context, the mirco or school context, the teacher context and the industrial relations context emerging from the interview data.

11. The macro or system level context relates to the norms and cultures of the DES. A cautious approach, especially in relation to long term expenditure, an emphasis on the short term as driven by the political imperative, a dearth of leadership in relation to policy making, a weak but growing culture of educational policy being based on research, a centralised approach to policy management and implementation, and a poor track record in relation to policy evaluation and dissemination were the most significant features of this context.
12. The presence of a multitude of agencies each with their own narrow remit and area of responsibility, coupled with a culture of each agency working independently, was also a significant aspect of the broader macro context effecting policy implementation.
13. The micro or school context was significant in shaping policy implementation. The influence of State curriculum and assessment, the organisational culture of schools being subject and classroom based and a reliance on a transmission model of teaching were the most salient features outlined. Whilst school context was identified by interviewees as affecting implementation this did not feature prominently within policy deliberations or in the resultant policy. This may be related to the version of change adopted, with ICTs being seen as a technical rather than as a curricular, cultural or organisational innovation.
14. The teacher context was portrayed as being influence by the micro/school context and by individual teacher attitudes to technology. Although the teacher context was recognised as directly affecting implementation at the classroom level there was limited consideration of this as reflected by the virtual non-involvement of teachers within the policy making process and the one size fits all approach to policy implementation including teacher professional development and support.
15. The industrial relations context was seen as impacting on the implementation of ICT by virtue of teacher union dominance of any debate regarding assessment via their significant presence at representational fora. Assessment is perceived as a key driver of what happens in schools including in respect of ICTs.
16. The NCTE achieved implementation of the main policy strands relative to the outcomes specified in the Schools IT2000 document. However its work was impacted upon by limited resourcing, short term planning and a lack of clarity regarding its precise role (policy implementation versus formulation). This lack of clarity at times resulted in a strained relationship with the DES and can be traced back to the manner in which Schools IT2000 and its associated structures were established with little time for consideration of

the associated detail. The varying nature of relationships between the NCTE and other agencies including the DES and the NCCA was viewed as influencing its ability to fulfill its perceived remit at different stages.

17. The approach taken towards infrastructure provision (TII) was viewed as appropriate as it fitted with the culture of schools being accustomed to receiving funding from the State and as it compensated for some of the policy shortcomings, specifically in relation to technical support. However there were drawbacks due to the political imperative which dictated a short term focus with an emphasis on getting the technology into schools to the detriment of planned supporting structures and prior documentation. This was in turn reflected by the fact that schools' approaches to purchasing were based on economic and technology related considerations rather than on desired educational outcomes. Generally the provision of infrastructure did not lead to enhanced ICT use across the curriculum as a consequence in part of limited clarity regarding the teaching, learning and assessment which would result from the use of this newly acquired technology.
18. Whilst the teacher training strand (TSI) brought some teachers to a level of ICT skills equipping teachers with computer skills did not necessarily mean that they were able to transfer those skills to a teaching or learning context. The pressure to meet the stated targets in respect of the numbers of teachers trained brought significant pressure to bear on the NCTE which was driven by the political imperative. This allowed for limited planning and consideration of the detail pertaining to the courses with the effect that the post-primary provision was viewed as limited in scope and approach.
19. The initial scope of the SIP project in terms of participant numbers was increased at the request of the Minister for Education. This increase made the management of the project more difficult. Although SIP was perceived positively there were limitations in respect of curriculum relevance and sustainability related to the pilot-project approach employed. The extent of ongoing evaluation arose as an issue in respect of the SIP project as did delayed dissemination of the evaluation which was conducted. The lack of a follow-up second phase was a major shortcoming of the SIP initiative and hence failed to build on the expertise developed over the course of the project.
20. The model of localised support underpinning the IT Advisors was viewed positively but there were shortcomings in its implementation due to a lack of critical mass, lack of clarity regarding the Advisors role and management issues which in some cases led to tensions between the NCTE and the Director of the Education Centres where the IT Advisor was based. Some Advisors interacted usefully with the schools in their catchment area although generally the potential of this model of support was not realised due in part to their

individual skill sets and their lack of initiative. The delay in appointment of the IT Advisors contributed to their limited effectiveness at the school level.

21. Scoilnet achieved its remit to limited effect due to a lack of updated content linked to the manner in which it was administered at varying stages of its existence. The involvement of Intel at one particular stage in its life cycle created tensions between the DES/NCTE/Intel with respect to the running of the site and the ownership of the content.
22. The main impacts arising from Schools IT2000 were the provision of infrastructure to schools and the up-skilling of teachers in terms of basic computer skills. The establishment of a formal policy and associated structures were seen as ends in themselves. The impact at the school and classroom level was uneven with little evidence of positive system wide implementation of ICT. The lack of provision for technical support was the most significant limitation of this policy. This was due to the costs involved and served to limit use by teachers at the school level.
23. The official evaluation of Schools IT2000 conducted by the NPADC was limited in terms of both process and substance. It was viewed as ‘political’ in that it provided only statistical data which could be used to justify the policy and associated spending. As such it provided little useful formative data to reflect what was happening in schools and thus inform future policy. The NPADC itself was seen as ‘political’ in that it provided a form of appeasement for partners who were discommoded by the lack of consultation at the policy development stage. The NCTE’s own capacity for internal evaluation was limited by its operational focus in response to ministerial pressures to meet the targets set for provision of infrastructure and teacher training.
24. The follow up *Blueprint for the Future of ICT in Irish Education* committed further funding so as to in-effect continue Schools IT2000 without any specific new targets or objectives. There were limitations to how this policy was produced and to the resultant end product both in terms of substance and physical presentation with a perceived miss-match between the content and the illustrations included. The change in Minister for Education at this time had a significant negative impact with an incoming Minister who relative to his predecessor had little interest in this area of educational provision.

Chapter 8 Discussion

Introduction

The preceding Chapters (5, 6 & 7) have detailed the process, influences and outcomes arising from the enactment of Schools IT2000 in November 1997 based on the interpretation of data contributed by twenty interviewees. The broad educational policy context and the specific technology in education context have been addressed in Chapters 2 and 3 respectively. This Chapter aims to draw the main strands of the work together by identifying and addressing the over-arching themes emerging from the totality of the primary data analysis and the literature based contextual analysis. In particular, many of the features of Irish educational policy making detailed in Chapter 2 have been reflected in the development and implementation of Schools IT2000 detailed over the course of Chapters 5, 6 and 7, as has the dominance of an approach consistent with an innovation-focused discourse in respect of ICT policy and educational change. These particular features provide an outline structure for the discussion of policy development and implementation in the context of Schools IT2000. The most salient features identified and reflected as themes in the sections which follow are:

- The lack of an underpinning philosophy and clarity of educational purpose (also reflected in the specific technology in education context detailed in Chapter 3). This in turn can be seen as reflected in the dominance of an approach to policy and policy implementation consistent with a techno-centric/innovation-focused discourse as enacted via Schools IT2000.
- The centralised approach to policy development and implementation including the key role played by senior civil servants and the Minister for Education. The influence of external factors and actors is also a feature here, including the influence of the neo-liberal agenda. The twin political and external influences contributed strongly to the dominance of an approach consistent with a techno-centric/innovation-focused discourse.
- The significance of relationships between agencies (including but not limited to: the NCTE, the DES and the NCCA) in the context of structural fragmentation.

Whilst this discussion chapter will address each of these features in turn this does not truly reflect the complexity of a scenario characterised by inter-related and overlapping themes and influences. For the purpose of completeness and clarity this may lead to some

repetition and overlap in the sections which follow. Finally a postscript to the discussion reflects on Schools IT2000 and addresses developments in the ten year time span post the lapse of the follow up Blueprint policy (2003-2013).

Theme 1: The lack of an underpinning philosophy and clarity regarding educational purpose reflected in the dominance of an approach to policy and policy implementation consistent with a techno-centric/innovation-focused discourse

Consistent with the historical development of technology in education in the Irish context Schools IT2000 did not resolve the questions of place, form and content which had dominated deliberations over the previous three decades, as detailed in Chapter 3. Instead it advanced a vague aspiration towards ‘integration’ with a hint towards reform in processes of teaching and learning via the ‘catalytic rationale.’ As such it did not provide clarity or detail regarding the specific use or role for ICT at the level of the individual school or classroom. Thus Schools IT2000 conceptualised the ‘reform’ as a technical rather than as a curricular innovation evidenced by its emphasis on the provision of structures and delivery mechanisms and of policy objectives easily translated into measurable and achievable outcomes for the purposes of policy evaluation and accountability. The emphasis of Schools IT2000 on structures and delivery was to the neglect of deeper philosophical deliberations regarding the value and purpose of education, the outcomes of which would have served to guide and inform decisions and actions in respect of ICT, and to establish the clarity since identified as lacking. However such deliberation would not have been politically expedient or served to deliver ‘results’ in the short-term. In this regard it may be argued that Schools IT2000 took the fast route thus avoiding potential speed ramps in the form of philosophical questions and related considerations to do with curriculum and assessment. This may also be seen as a practical response in the context of fragmentation based on an understanding of the extent of its remit or possible influence: Schools IT2000 had a remit and thus potential for influence in respect of technology in schools but not in respect of curriculum and/or assessment.

The approach to innovation enacted via Schools IT2000 resonates with House’s (1981) ‘technological perspective’ which sees reform as a mechanistic process. This is at odds with the perspectives of Mackey (1984) and Dunne and Morgan (1987) who going back to the

1980's recognised the need to address the fundamentals of the system to capitalise on IT rather than to provide 'add on' initiatives such as in the case of Schools IT2000. This suggests a distinction between reform of the core and peripheral elements of the system of education. Aviram (2000, p.331) sees successful adaptation of technology as addressing the core elements of schools and schooling as currently conceptualised, requiring 'a radical breaking of the organizational glass ceiling' (i.e. schools modern organisational structure based on class/subjects organisation, predetermined teacher/student roles and 'set' curriculum) which he sees as preventing real change. Ball (1987) in reflecting the challenges associated with educational change described schools as 'arenas of struggle' that involve the interests of individual actors as well as the maintenance of organisational control and conflict over policy. Thus technologies are not automatically and unproblematically co-opted into the organisation and practices of schools and can be seen as a new site for old struggles and conflicts, including the contestation of educational goals and purposes. On the other hand Schools IT2000 was predicated on fitting technology within mainstream curriculum and organisational structures with a token acknowledgement of more revolutionary possibilities via the catalytic rationale. In line with the techno-centric approach adopted it did not directly acknowledge the significance of the social processes which characterise how any innovation is interpreted and adopted by actors at the school level.

The lack of a clearly articulated underpinning philosophy has been noted in the aftermath of Schools IT2000 with the NCCA (2004, p.23) amongst others drawing attention to the need for such an agreed educational philosophy, stating that: 'The selected terms, definitions, and features of ICT should represent an agreed educational philosophy and vision across primary and post-primary education' being compatible with the general aims of education at the various levels. Trench (1999, p.112) identified the need to develop 'the educational rationale' as 'the bigger picture [Schools IT2000] is crudely drawn.' He saw that in the absence of 'educational priorities' there was a risk of investment 'without any measurable or significant gains to the quality of education.' Similarly Venezky and Davis (2002, p.36) advised that 'successful implementation of ICT is not simply a technical issue. It requires a vision about education and about the specific educational goals that ICT is to support.' As reflected in the findings presented in this thesis Robertson (2003, p.28) contends that ICT rationales have 'contained no narrative with values other than the economic and no

discussion of what education is for' and that the infusion of ICT with education has lacked 'a mythology of learning at its heart' and 'requires a theory about its purpose and meaning.' Zhao et al. (2006, p.691) noted a similar trend based on their analysis of national technology plans, stating that: 'although the technology plans seem to favor modern educational concepts (e.g. co-operative learning, active learning, interdisciplinary learning), few plans directly address any of the important epistemological assumptions about student learning.' This was in contrast to details relating to technology infrastructure and teacher professional development which Zhao et al. (2006) found to be well developed. As such this suggests that such a relatively simplistic approach is not just a feature of the Irish landscape as reflected in Schools IT2000 but has been in evidence more widely.

Reflecting the need to address clarity of purpose the Information Society Commission (2002, p.14) noted that any further investment in the Irish context 'must be supported by a clearer policy framework capturing high-level objectives and by the establishment of recognised indicators to measure progress.' Whilst the NCCA (2007) has presented an 'ICT Framework' for ICT in curriculum and assessment it has not been sufficiently streamlined and simplified to increase its accessibility to teachers with the result that questions regarding clarity and purpose are still live on the Irish ICT agenda. This was reflected by Galvin (2008, p.2) who saw this as 'the biggest challenge' to be overcome, over ten years after the launch of Schools IT2000:

Where the purposes of schools ICT are concerned we are still in something of an unresolved state. There is now pretty much a social and political consensus around the idea that we should do ICT in our schools: what is still largely unarticulated amongst schools and teachers is what we mean by doing ICT.

The concept of curriculum integration as espoused in Schools IT2000 has proved to be problematic in the Irish context particularly at post-primary level where the subject mentality is dominant. As noted by the OECD (1991) the CEB proposal to move away from subjects to Areas of Experience in the mid 1980s was not given a serious hearing and Gleeson (2009) noted a poor track record in respect of integration at both primary and post-primary levels. Reflective of the lack of clarity noted above O'Doherty et al. (2001) found varying teachers views and understandings of integration in the context of their study into the feasibility of a computer-based subject at Leaving Certificate level. Some teachers saw the use of computers within their subject as integration, others saw it as use across the curriculum as a tool for teaching and learning whilst others prioritised it as relevant aspects

of ICT included within the syllabus for their main teaching subject, reflecting a vocational orientation, e.g. electronics in Physics, systems management in Business Studies. Whilst noting these varying views O'Doherty et al. saw the emphasis on integration in Schools IT2000 as contributing to a more positive attitude amongst teachers towards the value of integration (albeit characterised by a multitude of meanings) and towards the use and inclusion of ICT in schools. However this study (O'Doherty et al., 2001) revealed the prevalence of pragmatic considerations in respect of teacher's attitudes and approaches to curriculum seeing some form of integration as the optimum approach to the inclusion of ICT from an educational perspective but seeing a stand-alone subject as a more realistic option for practical reasons. The meaning of integration was also explored in the context of the SIP evaluation undertaken by Galvin (2002) with a number of varying perspectives advanced by participants including integration as part of the teaching/learning process, social integration where students from different backgrounds work together using ICT and special needs integration which would allow learners with special needs to integrate with mainstream learners using ICTs. Taken together the findings of O'Doherty et al. (2001) and Galvin (2002) in the period immediately post Schools IT2000 provide evidence that whilst the concept of integration was garnering acceptance amongst teachers by virtue of its inclusion within Schools IT2000 the failure to define or contextualise it led to a multitude of interpretations amongst teachers. Linking to the concept of *idealization v. realization* as presented by Bruce (1993) this in turn raises the question as to what vision or interpretation of integration, if any, was intended by Schools IT2000. Related to structural fragmentation the limited role afforded to the NCCA at the policy development stage may go some distance to explaining the undeveloped conceptualisation of integration evident in Schools IT2000.

The lack of clarity and detail evident in respect of integration can also be seen as manifest more generally in multiple stages of the policy development and implementation process as detailed in the preceding findings chapters. It can be seen in the workings of the DES ICT Steering Group in respect of purpose and funding, in the context of the 'framework' document where the lack of associated detail led to the core implementation agency (the NCTE) developing policy 'on the hoof', and in the content of the follow-up Blueprint policy. This lack of clarity at various stages can be seen as a consequence and manifestation of a short-term emphasis and a general tendency not to prioritise planning for the longer

term, as highlighted in Chapter 2. The role of finance and reservations regarding the commitment of multi-annual funding is a significant limiting factor in reverting to the short-term. This had a particular effect on the operations of the NCTE and its ability to retain the services of staff who developed significant expertise but were retained on only year to year contracts.

In the absence of clarity and detail regarding its intended role, ICT use post Schools IT2000 was constructed at the school level (Mulkeen, 2003) continuing the trend identified by McGarr (2009) in respect of policy ‘nudges’ in the Irish context, as outlined in Chapter 3. As such, reflecting the pragmatic considerations identified by O’Doherty et al. (2001), school based decisions were influenced more by logistical and practical concerns than by educational considerations thus ensuring a continued dominance of computer rooms and computer studies as identified by McKenna (1992), Drury (1995) and Mulkeen (1997) prior to the enactment of Schools IT2000. Tubin (2007) noted the relationship and interaction between local and centralised aspects of the education system in respect of how technology is mediated at the school level and saw two possible responses, not dissimilar to the distinction by Reinking et al. (2000) between the assimilation and accommodation of technology: one which makes it easier, faster and more convenient to continue teaching in traditional ways and a second which involves new and better ways of teaching that would not be possible without technology. The evidence presented by Shiel and O’Flaherty (2006) suggest that in Tubin’s (2007) terms the first response was most prevalent post-Schools IT2000, continuing the trends evident prior to the initiative in respect of infrastructural arrangements via computer rooms (58% of computers at post-primary level) and the dominance of computer studies type provision. This resonates with the findings in respect of outcomes presented in Chapter 7 to the effect that in general terms Schools IT2000 enabled schools to do the same things better, and that the absence of clarity and detail undermined the capacity of Schools IT2000 to affect a greater level of impact.

In the absence of an underpinning philosophy and clarity of purpose it is argued that Schools IT2000 prioritised an approach consistent with a techno-centric/innovation-focused discourse with respect to policy and policy implementation as evidenced by: i) the emphasis on the provision of infrastructure and the unstated assumption that technological provision (coupled with basic IT skills for teachers) would lead to worthwhile outcomes; ii)

the lack of attention to school and teacher context; iii) an over reliance on pilot projects as a means of illustrating and achieving system wide implementation and impact; and iv) a lack of attention to internal evaluation and research. These aspects will be addressed in turn in the following sub-sections.

i) The emphasis on the provision of infrastructure and the unstated assumption that technological provision (coupled with basic IT skills for teachers) would lead to worthwhile outcomes

The emphasis on the provision of infrastructure is a key element of the prioritisation of a techno-centric/innovation-focused approach underpinned by the assumption that the provision of hardware along with basic teacher skills would lead to the achievement of desired outcomes specified in terms of integration (as already addressed) and computer literacy. Implicit in this is the sense that technology could only do good reflecting an uncritical acceptance of its perceived merits and an overly simplistic perspective on the inputs necessary for its potential to be realised at the school and classroom level. This resonates with Goodson's (1998, p.132) 'culture of inevitability' which sees the introduction of computers to schools as both inevitable and positive. In the context of Schools IT2000 this in turn can be related to the prevalence of the economic and political imperatives identified as key influences over the course of this work.

Whilst various evaluations and audits (NPADC, 2001; DES, 2008a) have recorded increased levels of equipment as a consequence of Schools IT2000, Mulkeen (2003) found little to suggest that the presence of equipment was having an impact on the use of technology within curriculum subjects. Further evidence of the impact of the installed computer base is provided by the OECD (2004a) which found Ireland to be in the lowest scoring three countries in terms of educational use of computers and the European Commission (2006) which found that the majority of Irish teachers (sixty percent) at all levels used computers in less than ten percent of subject classes. Cosgrove et al. (2005) completed a country specific analysis of the PISA data (OECD, 2005b) and found that student use of computers was comparatively low in Ireland, particularly during the school day. O'Shea et al. (2006) reported that eighty-five percent of the Irish post-primary students they surveyed indicated that their teachers did not use computers to support the teaching of

curriculum subjects with ninety-three percent reporting that computers were not located in the classrooms of the schools they attended. The emphasis on infrastructure in Schools IT2000 and the relatively poor outcomes in terms of use add weight to the assertions by Venezky and Davis (2002) and McGarr (2009) that technology by itself does not lead to a change in pedagogy, as use is a prerequisite to any change in pedagogical approach facilitated or underpinned by ICT. Overall this suggests a more complex inter-play of factors not reflected to any meaningful extent by Schools IT2000. As reflected by Dede (2000, p.282) ‘technology is not a ‘vitamin’ whose mere presence in schools catalyses better educational outcomes.’ The findings of Mulkeen (2003), the OECD (2004a), Cosgrove et al. (2005), the EU (2006) and O’Shea et al. (2006) are in line with those presented in Chapter 7 where impact at the school and classroom level was identified as ‘patchy’ or ‘hit and miss.’

In spite of the emphasis on provision of infrastructure and the advances made as a consequence with respect to student to computer ratios and Internet connectivity, the availability of computers to Irish students still ranks low in comparison to other countries with Ireland effectively in a third-tier with respect to computer availability for 15 year olds (OECD, 2005b). In general Irish schools were less well equipped for ICT post Schools IT2000 than schools in many other OECD member states. Whilst as developed above technology does not automatically lead to use, or changed pedagogy, lack of infrastructure is a clear impediment to use. In this regard the OECD (2005b) reported that fifty percent of Irish students were in schools whose principals reported that ‘instruction is hindered by a shortage of computers for instruction’ (OECD, 2005b, p.29). As a result of unsustained investment Shiel and O’Flaherty (2006) found that schools were worse off infrastructure wise in 2005 compared to the early 2000’s with more ‘old’ computers in schools by this stage. Drudy (2009) identified the poor level of ICT infrastructure in Irish schools as an impediment to future competitiveness in the knowledge economy. As indicated in the broad educational policy context (Chapter 2) Ireland has historically been conservative in respect of investment in education and although there was increased investment in line with economic expansion in the late 1990’s and early 2000’s (Schools IT2000 being one example) investment at this stage was still well below the OECD average on a range of indicators (Drudy, 2009). Overall this serves to contextualise the level of investment and the resultant infrastructural gains made as a consequence of Schools IT2000. Although

there were significant gains made relative to the starting position the comparative data gives weight to the assertions that more was needed as reflected in the findings (Chapter 7).

ii) The lack of attention to school and teacher context

Whilst Schools IT2000 is not strictly a curriculum initiative Cornbleth's (1990, p.13) analysis of curriculum in context provides a useful analogy distinguishing between the conventional 'technocratic' conceptualisation of curriculum and a 'critical approach.' The 'technocratic' conceptualisation sees curriculum as document or plan associated with a rationale approach to management and implementation based on the efficient management of resources to produce a specified product or outcome. However the 'technocratic' conceptualisation does not reflect the non-linear disorderly nature of curriculum and teaching and treats it apart from 'its structural and sociocultural contexts as if it were independent of its location in an education system, society and history.' Cornbleth sees 'a critical approach' as more adequately reflective of the reality of curriculum (in this case applied to Schools IT2000) as it 'assumes contextualization.' She reflects the significance of context with respect to both local and system level reform efforts: 'Curriculum as social process is created and experienced within, multiple, interacting contexts' and that 'efforts to change an education system or some aspect of it, either from within the system or outside it, are shaped by the nature of the system' (Cornbleth, 1990, p.101). Recognition of the significance of context implies attention to the complex and difficult tasks of creating and sustaining the supporting conditions or contexts (both structural and sociocultural) for the reformed practice to take place at the school level. This reflects the perspective and understanding of educational change as articulated by Bruce (1993) in the context of the *social system-focused* discourse on educational innovation, and by Selwyn (2011) in the context of social determinism.

The inattention to context strongly reflects the prioritisation of an innovative over a social practice discourse. This is further evidenced by the lack of differentiation with respect to provisions and intended outcomes by sector (primary v. post-primary) or school type. It is also evident in the lack of attention to school based provisions such as technical support and in-house pedagogical support including school-based (and thus contextualised) professional development for teachers. The inattention to the significance of the school

leadership dimension and to developing and supporting the role of the resident IT co-ordinator are advanced as further evidence of a 'one size fits all approach' to policy and policy implementation via Schools IT2000. The significance of context was strongly recognised by interviewees as reflected in findings (Chapter 7). This recognition of context (mainly in respect of teacher and broader cultural factors related to curriculum, assessment and pedagogy) is in contrast to the seemingly context neutral understanding of policy as articulated and enacted by Schools IT2000. The view that the positive outcomes that did arise were dependent on individual schools and teachers adds further weight to the significance of context as emerging from the interview data. As highlighted previously the techno-centric approach adopted encompassing a lack of attention to context was driven by the political imperative which resulted in some contextually related factors including the planned teacher training needs analysis being overlooked for the sake of expedience. Whilst greater recognition of the significance of the school principal and of the IT co-ordinator emerged as the initiative rolled-on by this stage the 'mould was cast' reflecting similar limitations as was the case with the late establishment of the IT Advisors.

Chapter 2 has set out some key dimensions of the Irish post-primary context which relate to the ICT context in particular. These include: the Classical Humanist tradition; the technical nature of reform; the dominance of examinations and transmission pedagogy; and, the influence of education for the economy and human capital formation. In addition several overlapping contextual factors including the role of State curriculum and student assessment, the subject culture of schools and the reliance on a transmission model of teaching were identified as significant by interviewees as presented in Chapter 7. However consideration of these factors was not reflected in the approach enacted via Schools IT2000 thus serving to decontextualise the initiative from those characteristics of the system which impact on its implementation. This was recognised by Conway (2000, p.234/5) who noted the limitations of the stance adopted:

IT2000 does not address the history of instructional practices in Irish schools. IT2000 adopts an innovative discourse to the extent that it attributes the new technologies with the power to promote student motivation, enhanced creativity and self-expression shorn away from current instructional practices...rather than adopting the technology and using it in the fashion IT2000 policy makers envisage, teachers are likely to filter innovations through their current conceptions of subject-matter, learning, teaching and students.

Reflective of both the local and broader contextual factors addressed above McGarr (2009, p. 1095) outlined how these factors exert greater influence than logistical or teacher related barriers:

The integration of ICT is affected by the broader organisational culture of the educational system as much as specific local school cultures. This aspect precedes the first and second order barriers outlined by Ertmer (1999). It involves the systemic response to ICT reforms which largely determines how the technology initiative will be interpreted by the 'system' before being filtered into schools. It includes the school culture and the subject subcultures within it, and the influence of previous regional and national policy. These factors have a very powerful influence on how technology initiatives and policy are mediated within an educational system and determines if, and how, the first and second order barriers will be addressed within the system.

Conway and Brennan-Freeman (2009, p.394) reflected a very similar view detailing that in the Irish context 'a schools culture and organizational structures more often than not mediate the integration of ICT into the fabric of teaching and learning' and that 'in particular, both the subject matter context and the wider assessment context shape, in very significant ways, the manner in which teachers experiment with ICT in the classroom' (Conway and Brennan-Freeman, 2009, p.397). Gleeson et al. (2001, p.7) also noted the need to consider contextual issues based on a study of ICT active Irish schools, concluding that 'the extent to which ICT is integrated for the promotion of teaching and learning will greatly depend on cultural and structural changes in the broader context of Irish education, particularly at post-primary' whilst the NCCA (2004, p.20) saw that 'models of ICT use which can be adapted to varying school circumstances and contexts are required along with targeted supports in training and implementation.'

Some rationalisation for the inattention to context is offer by Schnitz and Azbell (2001) who identified cross-national commonalities in ICT policy initiatives including investment in infrastructure and initial training for teachers, as was the case in Schools IT2000. They saw that the emergence of global economic considerations 'has produced a species of education reform that has taken on an unprecedented global character, regardless of performance of or local satisfaction with an educational system.' This was echoed by Zhao et al. (2006) in noting the wider context of globalisation as converging in technology policies which are being utilised as a lever for educational change. In this regard reforms such as Schools IT2000 which prioritise infrastructure and teacher skills reflect essentially global rather than local dimensions thus impacting on the likelihood for the reform to stick.

This in turn can be related to the external influence and the ‘policy borrowing’ (Ball, 1998) dimension as noted by Schnitz and Azbell (2001). In similar vein Ball (1999, p.198) identifies the role of education within the process of globalisation and distinguishes between ‘simple convergence’ based on exactly the same policies being invoked in very different national settings and ‘paradigm convergence’ based on the invocation of policies with common underlying principles, similar operational mechanisms and effects. Dede (2000, p.282) on the otherhand reflects the necessary ‘complex implementation process’ for technology to impact at the school level which includes in his view sustained, large-scale and simultaneous innovations in ‘curriculum, pedagogy, assessment, professional development; administration; [and] organizational structures’ amongst others. Venezky and Davis (2002, p.29) recognised that both infrastructure and teacher competencies are required for successful implementation of ICT in a school but that ‘the balance of these two factors, above a critical level of infrastructure, depends upon the school context: how ICT is used and the amount of technical support available to teachers.’

In addition to Dede (2002) and Venezky and Davis (2002) technology implementation and educational change has been addressed by Dede and Honan (2005), Austin and Anderson (2008), Lei et al. (2008) and Selwyn (2011) who all draw particular attention to the role of school contextual factors and the significance of the teacher in respect of any educational change encompassing technology implementation. In addressing the ‘messy realities’ of technology use in schools Selwyn (2011) identified the limitations of reform efforts which lack attention to contextual factors such as those which take a techno-centric approach, (characterised in Selwyn’s terms by the ‘government sponsored ‘dumping’ of technology into schools’ (p.33)) or which employ ‘means end thinking’ (p.36) as evident in innovation-focused policy discourses. Lei et al. (2008) drew attention to the fallacy of ‘technology as magic bullet’ but noted increased attention to contextually sensitive models of technological innovation in schools where technology may be part, but not the whole, of a changing ‘school ecology.’ Such an ecological perspective reflects the significance of context seeing the school as a dynamic ecosystem in which the characteristics and roles of different living species (such as technology, teachers and students) continuously affect one another and constantly change their relationships. As such the ecological model proposed by Lei et al. (2008) focuses on the activities, processes and practices in the classroom and school and thus highlights the flow of interaction which determines the nature of change.

The work of Dede and Honan (2005) also highlighted contextual factors as they relate to the scaling up of educational innovations. Promoting teacher ownership, human capacity building (for teachers, collaborators and partners), and leadership/decision making based on usable knowledge or data were also identified as significant by Dede and Honan (2005) in this regard.

The significance of the teacher in light of school organisational structures and subject sub-cultures which tend towards an individualistic teaching environment has been addressed by Selwyn (2011). In terms of organisational structure Selwyn sees the school as a site of surveillance and control which assimilates technology as another form of disciplinary regime. In terms of technology implementation the school is cast as a site of struggle and conflict with 'technological gatekeepers' (p.98) exerting powerful influences in deciding when and where technologies are used. Selwyn posits that the non use of technology within schools cannot be understood without reference to the wider structures and ordering of power within the school setting which suggests a sense 'these 'strange' and 'wild' technologies have to be 'house-trained'; they have to be integrated into the structures, daily routines and values of users and their environments' (p.115). Against this backdrop Selwyn (2011) suggests that both teachers and students can be strategic and pragmatic (non) users of technology: teachers due to their overriding concern with maintaining control, the issue of performativity where teacher performance is judged against the performance of students on high stakes examinations, and concerns of deprofessionalisation and professional and personal identity; students may be equally savvy non-users due to the limited role that technologies have played in assessment demands and the peripheral role it has played generally in schooling to date. In light of the significance of school context and the perspective on change as primarily socially shaped by actors and agents at the school level the desirability of orientating schools as learning organisations and of teachers engaging in collaborative, learning communities or communities of practice emerges strongly from the literature as reflected in Dede and Honan (2005) and Austin and Anderson (2008) amongst others.

Overall the significance of context has emerged from both the literature and the primary data analysis. It is argued that the lack of attention to context is a significant by-product of the techno-centric/innovation-focused approach enacted via Schools IT2000. The lack of

attention to context is played out at two levels: at the level of the school by virtue of a lack of attention to issues of differentiation and school based support provisions, and at the broader contextual level by virtue of non-consideration of the dominant approach to pedagogy as influenced by set curriculum and student assessment against the back drop of high stakes State examinations.

iii) An over reliance on pilot projects as a means of illustrating and achieving system wide implementation and impact

In the context of limited evidence of system wide ‘integration’ of ICT it is argued that there was an over reliance on pilots projects as a means of illustrating a meaningful level of implementation and impact. The pilot project dimension was fraught with difficulties related to the management of the projects (due to an expansion driven by the political imperative) and with regard to the research and dissemination dimensions. Perceived limitations in respect of sustainability and replication also emerged in respect of the pilot project based approach enacted via SIP. The repositioning of SIP within the policy development stage reflects the prioritisation of a techno-centric/innovation-focused approach such to focus instead on system wide roll out of hardware and teacher skills provision. This also had the effect of diverting resources which may otherwise have sustained SIP as a genuine ‘fact-finding exercise’ with an associated emphasis on social-practice related variables. The repositioned SIP hence became a more political device underpinned by an element of tokenism. The issues experienced with regard to evaluation and dissemination raise questions regarding the level of commitment at Department level to establishing and seeding worthwhile practice via SIP also evidence by the reluctance to extend it to a second follow-up phase.

Although the ‘pilot project’ has been prevalent in the Irish context, Venezky and Davis (2002, p.36) reflect the naive simplicity of this approach in the context of ICT initiatives which they found to be heavily affected and influenced by contextual factors such to limit their potential for ‘transfer.’ Instead they preferred to focus on establishing the conditions at other sites which would encourage successful ICT models to flourish:

This is the problem of scaling up from a small set of schools to an entire region or state or country, a problem often mistakenly treated as an issue of how to transfer what works at

one school to other schools. We see the problem quite differently and suggest that the term 'transfer' is misleading in this context...some [schools] were (and continue to be) involved with university research projects that provided professional development, coaching, and teaching materials, thus making them impractical models for national or regional implementation. But more importantly, years of research on school change show that the implementation plans that work best for any school are a function of the attitudes and abilities of the staff, the quality of leadership, the role played by parents, the community and national context, and the resources available.

This was supported by Fishman (2005) who noted the significance of context in 'scaling up' or adopting instructional technology innovations to different school settings. Echoing Bruce's (1993) *realization process* Fishman (2005) described this as requiring 'compromise between the vision of school practice represented by the innovation in its ideal state and the norms of the adopting school context.' Rather than being achievable by means of simple 'transfer' he saw it as necessary to 'engage collaboratively with schools in a process of reform that ultimately alters both normal practice and aspects of the innovation' (p.63). Both Venezky and Davis (2002) and Fishman (2005) reflect the complexity of the change process and the associated necessity for collaboration, human capacity building and continuous learning at the site of the intended change.

Mulkeen (2003) also questioned the validity of pilot projects as vehicles of change in the context of ICT based on the perspective that pilot projects tend only to attract those schools which are innovative and thus likely to adopt ICT successfully without involvement in a pilot project. He found little evidence that participation in an ICT pilot project led to wider use across the curriculum and that wider use, where it did occur, was sustained after the end of the project. Although Galvin (2002, p.12) recorded innovation at the individual school levels in the context of SIP he identified two particular issues as emerging generally reflective of the findings presented in Chapter 7: technicality versus sustainability and the challenge of replication. He identified two distinct categories of pilot project: 'high tech' and 'high teach' but saw sustainability issues in respect of both. For the 'high tech' projects the threat to sustainability was based on their heavy reliance on advanced infrastructure and the associated costs as well as the technical skills necessary to sustain the project. For the 'high teach' the threat was based on the difficulty in continuously coming up with novel ideas to sustain student engagement with the project. The need for technical support emerged across both categories whether 'high tech' or 'high teach.' Galvin saw replication as necessitating ongoing recording, collating and analysis of data at individual project sites

and raised strong concerns that it was not happening to the extent that it might, reflecting the concerns raised more generally by participants in this study. Marshall and Anderson (2008) saw the failure to follow through in this regard as contributing to technology integration remaining on the fringes of education despite many useful SIP projects. An alternative approach would, in their view, have served to ‘build a model moving from the periphery to the centre (i.e. from pilot to mainstream implementation).’ Some recognition of the significance of these issues is evident in the DES (2008a) audit of the ICT Support Service for Schools which recommended the appointment of a National Co-ordinator to oversee the evaluation and dissemination of material from existing innovative ICT projects, as well as tackling issues of technical support and sustainability. However such an appointment many years after the initial SIP projects had lapsed may be seen as a clear case of ‘closing the stable door after the horse had bolted.’

iv) A lack of attention to internal evaluation and research

A lack of attention to internal evaluation and research is advanced as a further by-product of the techno-centric/innovation-focused approach. This also relates to the inattention to context as such a research basis may have served to capture the situational variations which exist across schools and thus contribute to an improved understanding for future efforts of the circumstances which facilitate and impede change. The neglect of internal evaluation was seen as due to the prioritisation of quick starting the initiative driven by the political imperative. The lack of attention to internal formative evaluation was perceived by interviewees as prevalent within the culture and context of Irish education and to manifest itself at the organisational level in respect of the NCTE where evaluation was perceived as being external rather than internal to the organisation i.e. as something conducted by the ‘outsider.’ The lack of attention to evaluation within the general policy context is as noted previously by O’Halpin (1992, p.179) who saw ‘an almost endemic reluctance...to treat the review of policy as an integral part of the policy process’ and by O’Shea (1993), O’Rinn (1993) and Breathnach (1984) within the ICT context relating to provisions for monitoring and review of the then newly introduced Computer Studies module within the Mathematics syllabus.

As developed subsequently the operational focus which developed with respect to the work of the NCTE limited its capacity to develop a research dimension which may have served to empower the organisation and its work. The basis of Schools IT2000 in personal experience and ‘policy borrowing’ as detailed in Chapter 6 resonates with Sugrue (2009) as regards the tendency for policy to be legitimated by other means rather than by academic research. In this regard the anti-intellectual bias prevalence within the broad context of Irish educational policy making (as detailed in Chapter 2) can be seen as contributing to the approach to policy enacted via Schools IT2000.

Theme 2: The centralised approach to policy development and implementation including the key role played by senior civil servants/the Minister for Education and the influence of external/economic factors

Schools IT2000 enacted a centralised approach to policy development and implementation reflective of the broad policy making context in the Irish setting. Whilst heavily influenced by external/industrial agents as outlined in Chapter 6 the DES via its representation on the ICT Steering Group (constituting eight out of thirteen members) in effect retained control of the policy development process. DES control was also reflected in the significance of the ‘rewrite’ of the Steering Group proposals as detailed in Chapter 5 whereby the understanding of the complexity of the undertaking evident in the work of the Steering Group was undermined by the adjustment and repositioning of proposed key elements by DES personnel. In this regard the philosophy and values articulated by some key policy actors were tempered by the conservative progressivism of the DES. The twin political (mediated in the case of the rewrite by the DES) and economic influences can be seen as contributing strongly to the prioritisation of an *innovation-focused* discourse over a *social system-focused* discourse with the economic influence perceived as contributing to a simplistic understanding of educational issues.

The theme of DES ‘control’ is a recurring one with respect to multiple stages in the policy process i.e. development and implementation. Schools IT2000 was developed using the ‘traditional’ approach outlined by Harris (1989) rather than by the partnership approach which became the norm in the mid 1980’s as detailed by Gleeson (2009) and Granville (2004). The general approach detailed by Harris (1989) and enacted in the case of

Schools IT2000 reflects the OECD's (1991, p.40) observation with regard to the resistance to creating 'any permanent machinery' for the policy making process, taking place independent of any formalised structures for policy making. Thus the ICT Steering Committee may itself be considered an ad hoc structure set up with a particular remit and disbanded on completion. Such an approach has implications for the general coherence of policy and policy making and reflects the centre driven yet fragmented approach to policy development and implementation which has been evident in the Irish context. The lack of adherence to partnership may be understood in the context of DES control and also in terms of political expedience and related practicalities which dictated a tight timeframe and thus a policy development stage characterised by 'huge rush.' Attention to partnership was considered impractical in this context and as a potential hindrance to quick starting the initiative in light of the observations by both the OECD (1991) and Coolahan (1995) with regard to the presence and influence of powerful interest groups outside of the DES. The approach taken in the development stage of Schools IT2000 essentially short circuited the partnership approach and hence the need for such negotiation for the sake of expedience. It thus facilitated DES control and in the process raised questions regarding the perceived value of the partnership approach from the DES perspective. In this regard Schools IT2000 may have been considered by school based practitioners as a top-down imposed reform rather than as negotiated from the ground up. This was seen by some interviewees as impacting negatively on the potential for implementation especially from the industrial relations perspective. This version of change involving teachers as recipients rather than as participants was also perceived as having its limitations. In the absence of partnership and in the context of the disbanding of the NPADC a general consensus has emerged as regards the need for a consultative forum in respect of ICTs in education as reflected by the DES (2008a) amongst others.

The conservatism evident on the part of the DES in the context of the 'rewrite' of the ICT Steering Group proposals can be explained to some extent by its historical relationship with the Department of Finance particularly in respect of those aspects likely to incur recurring costs. In this regard the DES Inspectorate played a key role in enacting DES conservatism and control via the 'rewrite'. A number of varying perspectives regarding the role of the Inspectorate are evident in the broad policy literature as outlined in Chapter 2: both the OECD (1991) and Cromien (2000) noted a 'supporting role' and saw scope for a more pro-

active, strategic dimension to their work whilst Harris (1989) and O’Halpin (1992) noted more influential roles for civil servants as potential decision makers or as effecting the flow of information on which decisions might be based. The evidence in respect of Schools IT2000 would suggest a greater congruence with the perspectives of Harris (1989) and O’Halpin (1992) than with those of the OECD (1991) and Cromien (2000) with a number of key Inspectors being directly responsible for the version of policy eventually published. However the perspectives of these individual Inspectors can in turn be understood as influenced by the culture of the DES as identified within the macro context outlined in Chapter 6. The most salient features identified included a cautious conservative approach, a centralised approach to policy management and implementation, and a poor track record in respect of policy evaluation and research - all of which can be directly applied in the context of Schools IT2000. In this regard the culture of the DES can be seen as enacting a controlling influenced mediated via its civil servants/Inspectors.

The implications of State control of education systems are addressed by Cornbleth (1990) who recognises the State’s role in the recognition and definition of problems or ‘agenda setting’ through mediating external demands as well as pursuing its own interests. She identifies a number of approaches or mechanisms to enacting State policy including: mandates, inducements, capacity-building, system-changing, and symbolic reform. Whilst there are some elements of ‘inducements’ and ‘capacity building’ evident in the provisions of Schools IT2000, the approach taken resonates loudly with that of ‘symbolic reform.’ She outlines that:

The appeal of symbolic reform lies in the ‘illusion of progress’ it engenders. Given the widespread expectation that a rapidly changing world necessitates compatible educational changes, even the appearance of State (or education system) action towards educational modernisation usually is perceived positively...creating an image of a State and education system that are responsive to perceived needs and a feeling that things are getting better. Reform then becomes the symbolic orchestration of ritual, and motion is taken as change. The ‘effect’ is to sustain both the State and the educational status quo (Cornbleth, 1990, p.140).

Cornbleth emphasises the legitimacy of the process and the non-separability of means and ends in this conceptualisation of policy which can be seen as strongly reflected in Schools IT2000. This places the emphasis on the ‘doing’ of change as exemplified by the provision of resources and structures rather than on the realisation of any proposed impact or outcome. The rhetoric of change and positivity is a further dimension of ‘symbolic reform’

reflected in Schools IT2000. This may also be seen in the context of pragmatism whereby (again recognising the significance of context) what is feasible dominates over what is desirable. Similarly, Selwyn (2011, p.66) in noting the dominance of political and economic motivations sees technology policy drives as primarily ‘symbolic interventions’ which are not intended to enact real change but are more so a high-profile means of governments being seen to be doing something about the information age in the context of globalisation, the rise of neo-liberalism, and the wider political, economic and ideological agendas. This also rationalises the dominance of a techno-centric approach as symbolically the provision of infrastructure and teacher professional development are more readily visible and achievable than what might be considered as meaningful educational change, encompassing its many layers of complexity. In this regard Selwyn (2011, p.59) sees technology policy as not having purely ‘educational’ intentions and that its ‘fuzziness’ serves to mask the ‘social, political and economic agendas it is used to propagate.’

The key role played by an enthusiastic Minister for Education emerged very strongly in respect of Schools IT2000. This can be seen as having injected both benefits and limitations often of a double-edged sword type dimension. Whilst the hands-on interest of the Minister injected a level of priority and impetus that had not been the case previously this interest strongly influenced a ‘political imperative’ which impacted at all stage of the policy process with the effect that many of the key decisions were based on political expedience rather than on educational grounds thus contributing to the dominance of a techno-centric/innovation-focused approach. This was reflected most clearly in an emerging short term focus and an emphasis on quantifiable outcomes as reflected in the provision of infrastructure and teacher skills. The significance of the Minister’s enthusiasm is perhaps best illustrated by the speed with which developments took place in the context of Schools IT2000 in contrast to the inertia of the preceding three decades as detailed in Chapter 3. This suggests that a Minister committed to the cause is a much more potent force for initiating reform than the work of voluntary interest groups operating from the ground up as was the case over many years with the CESI. It also indicates that a committed Minister can overwrite the conservative tendencies of his Department. However it must be recognised that Schools IT2000 was borne out of the simultaneous coming together of a number of factors, the political dimension being but one factor albeit a prominent one.

The commitment of various Ministers in respect of ‘pet projects’ (Gleeson, 2009, p.114) is not unique to the ICT landscape. An acknowledged limitation of this as a policy driver is what happens when that particular Minister moves on. In the case of ICT the period post Michael Martin was characterised by a non-prioritising of this area due in large part to the office of an uninterested successor. The issue of DES control also reemerged at this stage with the belated establishment of the ICT Policy Unit as a policing mechanism in respect of the activities of the NCTE in the wake of a pro-active Minister. Whilst in office Minister Martin may be understood to have assumed control driving implementation via the NCTE. In his wake the Policy Unit provided a means for the DES to reestablish control over this area of educational provision. This perception of the ICT Policy Unit as a policing mechanism is given further credence by its failure to produce any policy documents over the course of its existence.

The influence of education for the economy and human capital formation as detailed in Chapter 2 was very much in evidence in respect of Schools IT2000. This is illustrated by the significance of the external/industrial influences as detailed in Chapter 6 and the prominence afforded to the ‘economic’ rationale within the Schools IT2000 policy framework. Thus Schools IT2000 was more concerned with and driven by national political and economic contexts than by the educational purposes it would serve and the quality of the teaching and learning practices which would result from its presence in Irish schools and classrooms. This can be understood in the context of ‘symbolic reform’ as addressed previously drawing on Cornbleth (1990) and Selwyn (2011). This version of change was characterised by a top-down approach motivated by external considerations rather than by an aspiration towards deeper change at the levels of classroom practice and teachers’ beliefs and values. The language of reform and improvement versus the reality of change and development can be understood in this context.

The linkages between education and economy reflect more broadly ‘a global policy paradigm in education’ (Ball, 1999, p.199) characterised by the modelling of schooling and provision upon those of commercial, market institutions. Whilst the ‘new orthodoxy’ as identified by Ball (1999) is a relatively recent phenomenon the position of the school with respect to the economy and specifically as servant to the economy has been addressed previously with Bowles and Gintis (1976) drawing attention to its role in social

reproduction by preparing students to assume a particular predetermined position within the economic order. In this view schooling is a tool to shape the mindset for capitalist purposes and plays a significant role in shaping and reproducing social outcomes with success and achievement not purely based on ability and effort i.e. on merit, but instead on factors such as social position, family connections, race, religion and gender. This perspective also serves to down-play the significance of the ‘equality of opportunity’ argument although Drudy and Lynch (1993, p.31) rationalise this such that ‘the task of education [is] to make sure that every member of a society has, as it were, an equal chance to be unequal and can move according to skill and effort into the social position most appropriate to their talents.’

The ‘new orthodoxy’ of educational policy making has been summarised by Carter and O’Neill (1995, p.9) who identified five main constituent elements, the first two of which are particularly evident in Schools IT2000: improving national economics by tightening the connections between schooling, employment, productivity and trade; and, enhancing student outcomes in employment related skills and competencies. Concepts such as the ‘information society’ and ‘the knowledge economy’ have emerged against this backdrop symbolising the increasing colonisation of education policy by economic policy imperatives. The ‘global policy paradigm’ and the ‘new orthodoxy’ reflect the ‘problem’ of globalisation (Ball, 1998, p.127) which produces the contemporary ‘problems’ of education as well as the generic ‘solutions.’ Indeed Dale (2000, p.427) saw the effects of globalisation on education as a reflection of ‘the irresistible growth of information technology.’ Reflecting the limitations of ‘policy borrowing’ these ‘generic’ solutions rarely translate into policy text or practice in direct or pristine forms echoing the significance of context as discussed previously. The political usefulness of a perception of ‘crisis’ against a backdrop of international competitiveness encourages such inter-borrowing and contributes to policy convergence, as was reflected in the case of Schools IT2000. Lingard (2010, p. 132) argued that to be effective policy borrowing must be accompanied by ‘policy learning’ which entails attention to the effects of the policy in the source system as well as careful consideration of ‘national and local histories, cultures and so on’ in the borrowing system; in effect attention to contextual factors as developed previously. Zhao et al. (2006) articulated a similar view suggesting that whilst it is not unwise to learn from or engage in policy borrowing from other nations, ultimately ICT policy has to serve local goals, contexts and needs.

The influence of economic policy imperatives has contributed to a shift towards a neoliberal ideology consistent with the commodification, consumerisation and commercialisation of education as well as amongst other identified factors an emphasis on ‘performativity’ and ‘new managerialism’ through the cultivation of a ‘corporate culture’ and new forms of surveillance and self-monitoring (Ball, 1998). Ball (1999) argues that the subordination of education to ‘the economic’ and the rendering of education itself as a commodity plays a key role in the wearing away of the professional/ethical regimes that were dominant in schools and their replacement by entrepreneurial/competitive regimes. He elaborates such that:

Schools become more like businesses and more business-like. Educational knowledge is reworked in terms of the skills, competencies and dispositions required by the economy. Parents and students are positioned as consumers and entreated to compare schools in terms of published performance indicators. Competition between schools for market share is encouraged (Ball, 1999, p.198).

In the context of Schools IT2000 there is an evident contradiction between the stated vocational and economic reasons for promoting the use of ICT in schools set against the backdrop of pedagogical practices (as detailed in Chapter 2) which are not necessarily congruent with the needs of high skills economy. The technocratic approach employed sees ICT as one form of input to the system of education based on a black box input/output approach but, as detailed previously, Schools IT2000 contained no discussion or detail of the process or nature of learning which might occur as a result of this input. Whilst the ‘social rationale’ is afforded prominence in the framework document (DES, 1997a) and was a consideration in the mass roll-out approach adopted this was in reality a peripheral issue in the context of the centrality of the economic (and political) consideration and influences, and as reflected in the limited attention to equity issues in the context of policy implementation. Ball (1998, p.126) sees such downplaying in the context of the ‘new orthodoxy’ whereby the social and welfare purposes of education are ‘systematically played down’ as education is increasingly subject to ‘value criteria.’ Zhao and Conway (2001, p.24) based on their analysis of state technology plans in the United States noted a tendency towards slogan-like treatments of the democratic or social rationale in turn reflected in implementation strategies where ‘the goal of democratic equality is seldom elaborated on as concretely as the goal of economic competitiveness.’ In respect of Schools IT2000 Mulkeen (2002) found little evidence that the strategy had succeeded in addressing the social agenda, reflecting the limited attention at the level of policy implementation.

The neo-liberal agenda sees teacher professionalism in terms of skills and competencies and the nature of cpd provision provided via Schools IT2000 in respect of teacher's skills is congruent with this perspective. In the context of 'new managerialism' Gleeson and O'Donnabhain (2009) have detailed the growing demand for accountability and performance management within education and proposed the need for new measures of accountability which reflect the educational process as much as the outcome. An emphasis on or valuing of the outcome only can serve to reduce the teacher to the deliverer of standardised guidelines driven by set targets and benchmarks. This has implications for teacher professionalism and prioritises standardisation over individuality tending towards an anti-intellectual conceptualisation of the teacher and their role. The effect of practice driven by benchmarks or targets is evident in the case of Schools IT2000 in respect of the drive to increase the numbers of computers in schools and to record high numbers of teachers participating in the teacher training provision influenced by the political imperative. The techno-centric approach enacted via Schools IT2000 is reflective of the neo-liberal agenda generally including the prevalence of structural fragmentation as developed in Theme 3.

Theme 3: The significance of relationships in the context of structural fragmentation

Structural fragmentation has been established as a significant aspect of the Irish policy context (Chapter 2) reflected in the case of Schools IT2000 (Chapters 6 & 7) with respect to the inter-relationships between the key agencies with responsibility for the various facets of educational provision in this area, specifically the DES/Minister for Education with overall responsibility for policy, the NCTE with responsibility for (mainly) implementation and the NCCA with responsibility for curriculum and assessment. A number of curriculum support agencies also exist and the establishment of the DES ICT Policy Unit in the latter stages of Schools IT2000 added another feature to this already crowded landscape. As the core implementation agency in respect of ICT the NCTE occupied a central position with respect to the establishment and maintenance of relationships between these agencies, especially in the period pre the establishment of the DES ICT Policy Unit. As such the NCTE assumes a central position in the analysis of fragmentation relating to the enactment of Schools IT2000.

It can be argued that Schools IT2000 itself is underpinned by a fragmented approach inherent in its implementation strategies via three seemingly distinct strands focusing on infrastructure (TII), teaching training (TSI) and support (SSI). The lack of attention to and articulation of the relationship between these distinct strands is a feature of the lack of clarity of purpose as addressed previously. This approach assumes that these strands can be constructed separately but that their combined effect will somehow merge to effect implementation and outcomes at the school level.

The limited involvement of the NCCA at the development stage provides some explanation for the lack of attention to curricular aspects within Schools IT2000 and provided an indication of what was to come with respect to the role of the NCCA vis-à-vis the ICT initiative. The parallel strands of work undertaken by the NCCA and the NCTE over the timeframe of Schools IT2000 provides the most concrete example of fragmentation relating to the progression of the ICT in education agenda. Whilst the NCTE was implementing the brief outlined in Schools IT2000 the NCCA (2004, p.4) detailed a parallel agenda via its ICT Technical Working Group formed in 1999 which entailed the development and publication of a number of ICT related curriculum documents and guidelines for practice. If and how these strands ever intersected is unclear although as reflected in Chapters 6 and 7 the NCCA perspective has recognised the significance of fragmentation in respect of its role and involvement in the ICT area. This was explicitly addressed by the NCCA (2002, p.8) in the context of recommendation on the future of Schools IT2000 stating that:

It is of crucial importance that the expertise in curriculum and assessment of the NCCA should be allied to the expertise of the NCTE in conjunction with the involvement of the Inspectorate of the DES...The responsibility and expertise of the NCCA in the area of curriculum and assessment would posit for it a more central role in the development of future strategy and planning for in-career development in ICT.

This was further reflected by the NCCA (2004, p.57) in calling for ‘a co-ordinated’ approach. Although the appointment of two ICT Education Officers between the NCTE and NCCA was identified by the DES (2008a, p.99) as playing a ‘critical bridging role’ between the two agencies the non-representation of the NCCA on the two most recent policy development committees in respect of *Investing Effectively in ICT in Schools 2008 – 2013* (DES, 2008b) and *Smart Schools = Smart Economy* (DES, 2009) would indicate that their calls for greater involvement largely fell on deaf ears. This also suggests a continued perception of ICT as a technical rather than as a curricular intervention. It remains to be

seen how the proposed merger of the NCTE with the NCCA as set out in the Programme for Government (2011-2016) will impact on future provisions in the area of ICT.

The DES Value for Money Audit (DES, 2008a, p.115) noted the prevalence of fragmentation in the context of its attempts to establish 'cause and effect' for the effectiveness of the Schools ICT Support Service which encompasses the work of the NCTE, noting that:

The Schools ICT Support Service is delivered through a number of initiatives managed by a number of different bodies. This cross-cutting delivery mechanism has implications for attributing cause and effect to certain indicators. Some indicators can be significantly influenced by other agencies.

Whilst the data reflected in Chapters 6 and 7 detailed fragmentation with respect to the work of the NCTE, the NCCA and the SDPI this DES audit also drew attention to fragmentation in the context of the work of the NCTE and a number of other agencies specifically the Primary Curriculum Support Programme (PCSP) and the Leadership Development for Schools (LDS). This was also reflected in an earlier audit of programmes under the management of the Teacher Education Section (TES) of the DES which drew particular attention to the lack of NCTE input into the professional development activities of the PCSP (DES, 2007).

In the context of fragmentation various tensions and turf wars ensued between the NCTE and a range of partner agencies at differing stages. For example some of the tensions identified by interviewees included: between the NCTE and (some) Education Centre Directors in relation to the IT Advisors; between the NCTE/DES and Intel in relation to Scoilnet; between the NCTE and the NPADC around the time of their evaluation; between the NCTE and the DES in relation to the delayed dissemination of the SIP evaluation; and, between the NCTE and the DES at the time of the change in Minister and the belated setting up of the ICT Policy Unit as a means to enacting greater DES control. However any criticism of the NCTE as regards its capacity to establish and maintain relationships with other agencies (as reflected in Chapter 7) must be seen in the context of its extensive brief, limited resourcing, political pressure to meet set targets and a lack of clarity as regards its precise role and function whether in respect of policy implementation or development or both. Whilst the NCTE may have benefited from enhanced internal leadership and vision

encompassing the development of a research strategy as a means towards empowering itself, it was on the other hand not empowered to any meaningful extent by the DES. The ‘operational’ focus of its work and subservient nature of its relationship with the DES can be understood in the context of the DES tendency towards control as addressed previously. In this regard the status and positioning of the NCTE as it developed can be understood as suiting the DES – the NCTE was effectively ‘kept in its place.’ A significant feature of this non-empowerment was its incapacity for anything beyond short term planning due to uncertainty around budgets and staffing which saw a lot of accumulated expertise lost as staff, in the absence of guarantees, moved to presumably more secure positions. This uncertainty regarding funding and its consequences was noted by the both the CESI (2001) and the DES (2008a) in the context of its audit of the Schools ICT Support Service:

£81 million was allocated by the Government to continue the aims of Schools IT 2000. That sum appears to be lying idle since, with no sign of a plan to use it. In fact the year 2000 saw a slowdown in training as money to continue the programme, already embarked upon, ran out and many teachers having been encouraged to seek ICT training found it no longer available to them... neither the ICT advisors in Education Centres nor indeed the National Co-ordinators in the NCTE know if they will be in place after the coming summer. They do not know if their contracts will be renewed. This is the second time they have gone through this uncertainty in the last 12 months. It was almost the end of 2000 when they learned that the contracts were to be extended to August 2001 ...What kind of planning and policy making is possible in these circumstances? (CESI, 2001, p.1).

The Steering Committee considered the NCTE’s ability to engage in meaningful long-range planning to be hampered by the uncertainty surrounding its future and staff, a situation which is compounded by the absence of governance structures (DES, 2008a, p.xi).

These issues related to funding and budgets (reflecting the lack of empowerment and prioritisation) were compounded by the ad-hoc nature of NCTE governance arrangements which saw it constituted as part of Dublin City University (DCU) with complex financial arrangements leading to tensions with DCU as a result. This was recognised as follows by the DES (2008a):

The NCTE has operated pursuant to a memorandum of agreement between the DES and DCU. The NCTE has no legal status and has operated on an ad-hoc basis with its staff being re-appointed on fixed term contracts an annual basis. This system involves a considerable amount of time and work in agreeing staffing arrangements and re-issuing staff contracts, etc. The Department of Finance sanctions for various posts have been on a temporary basis and have lapsed in most cases (DES, 2008a, p.67).

The nature of these arrangements can be traced back to the early days of Schools IT2000 and the urgency to establish the structures for roll out of the initiative. Whilst faced with these and other challenges the period post Schools IT2000 and Minister Michael Martin

presented further challenges for the NCTE in the absence of both a policy to implement and a supportive minister. However the NCTE perspective (as outlined in Chapter 7) did not see it as such given that the work ‘was ongoing’ although reflecting that at this stage its work continued in respect of what might be considered non-contentious areas such as the provision of infrastructure and broadband – in effecting a continuation of the main thrusts of Schools IT2000/the Blueprint. The lack of a follow-up policy at this stage can be seen as continuing the non-empowerment of the NCTE and, as reflected previously, it did not possess the means or capacity for self-empowerment. Due to the prevailing circumstances it may be concluded that at this stage its work continued rather than developed, although acknowledging that there was some change in the nature of professional development courses provided for teachers, being more subject specific than was the case previously (NCTE, 2005).

The preceding sections have detailed the significance of structural fragmentation with respect to Schools IT2000, particularly with regard to the work and roles of the NCCA and the NCTE. The links between fragmentation and a technicist approach to education have been addressed by Cornbleth (1990) and Gleeson (2009) who draws on the technical paradigm as developed by Habermas. Cornbleth (1990, p.19) elaborates that fragmentation is illustrative of decontextualised, technocratic approaches to curriculum and relates this to the prevalence of ‘scientific management’ which fragments ‘complex acts’ into ‘presumably discrete elements’ on the basis that ‘separate elements could best be constructed one at a time and then assembled to create the desired whole.’ As detailed in Chapter 2 this leads to an ‘engineering mentality’ encompassing ‘componentiality’ (Cornbleth, 1990, p.21). Componentiality can be applied to the system of education whereby it is broken down into constituent components or agencies such as the NCTE and the NCCA in the case of this study. Cornbleth details how this facilitates a ‘tinkering attitude’ and a ‘problem-solving inventiveness’ reflective of the technicist approach. This also relates to ‘symbolic reform’ and ‘progressivity’ (Cornbleth, 1990, p.21) which refers to an ‘onwards and upward’ view of the world that favours ongoing change and improvement, but mainly at a surface level. Along similar lines Selwyn (2011, p.64) relates system fragmentation to a maintenance of the status quo and, as was the case with respect to Schools IT2000, to addressing ‘safe components’ rather than to a reform or change agenda:

Schools technology policy-making...lacks the substance and forcefulness to establish meaningful connections between the many different actors involved in a country's educational technology community – thus allowing schools, teachers, IT vendors, technologists, journalists and the like to continue as they have always done. It is notable how most state policy-making appears to conform to (or at least fails to challenge directly) the educational technology consensus – with a noticeable preference for addressing 'safe' or unthreatening issues of resourcing, training and connectivity rather than more controversial areas of reform.

So Where to Now? ICT Policy for Schools 2003-2013

Conway and Brennan-Freeman (2009, p.388) outlined five distinct phases with respect to ICT in education policy in Ireland over the last fifteen years. These are:

1. Policy formulation phase leading to the Schools IT2000 document in 1997;
2. Policy rollout phase [Schools IT2000] between 1997 and 2000;
3. Policy update phase with publication of a document titled *Blueprint for the Future of ICTs*;
4. Policy lull plus initiative-driven ICT phase from 2003-2007; and
5. Policy reformulation and broadening phase in the context of the National Development Plan (2007-2013).

Phases 1-3 have formed the focus of this work as detailed in the preceding chapters. The following brief postscript will address the ten year period post the Blueprint (2003-2013) corresponding with phases 4 and 5 as identified above by Conway and Brennan-Freeman (2009). These ten years have seen little significant progression in this area of educational provision reflected by minimal additional impact at the school level. Reflective of themes drawn out already and in particular the technicist instrumental approach there have been changes in respect of structures (most significantly the disbanding of the IT Advisors and the merger of the NCTE into the NCCA) and in the production of policy as document reflecting Cornbleth's (1990) 'technocratic approach' by virtue of *Investing Effectively in ICT in Schools 2008 – 2013* (DES, 2008b) and *Smart Schools = Smart Economy* (DES, 2009). However neither publications were, due to mainly economic considerations, raised to 'full' policy status and thus implemented with the effect that Schools IT2000 is still the most significant initiative in this area of education, and in the absence of further statements of policy, still provides the overarching guiding principles for activity many years after its initiation and publication: in spite of its 'age' Schools IT2000 is still the main reference point in respect of technology in education in the Irish context.

The mid 2000's reflected a period of policy lull as highlighted by Conway and Brennan-Freeman (2009). During this time the activities of the NCTE were sustained by the DES Scientific and Technological Education Investment Fund with reference to the main thrusts of Schools IT2000. Annual reports for this fund in the period 2003 to 2008 carry essentially the same content, allocating approximately €30 million per annum with reference to the rationale and objectives of Schools IT2000 even though the lifespan of this policy ended and was replaced by the Blueprint in 2001. Reflective of the fragmentation theme the main development at this time was the provision of broadband to schools via the *National Broadband Programme for Schools* (Department of Communications, Marine and Natural Resources, 2005). Curricular related developments were ongoing as reflected in the NCCA's (2007) *ICT Framework* with this particular version being published after a period of school based trial and refinement. This followed on from the NCCA (2004) discussion paper on curriculum, assessment and ICT in the Irish context.

The mid 2000's also saw the arrival of the DES Inspectorate on the ICT scene at the school level reflected in the publication of *ICT in Schools Inspectorate Evaluation Studies* (DES, 2008c). This evaluation reported that ICT was used in 18% of the 111 post-primary classes observed and that it was used effectively in approximately half of those classes. It also noted that the majority of computers were located in computer rooms rather than in general classrooms reflected in the prevalence of ICT classes. Fewer than half of the post-primary schools (46%) had an ICT plan and those which did focused more on infrastructural rather than on teaching and learning issues. The examination driven curriculum coupled with the fact that assessment procedures do not reflect an emphasis on ICT was identified as one of a range of factors constraining use at post-primary level. However reflective perhaps of its perceived scope and remit this evaluation made recommendations for changes to teaching, learning and assessment only at the school level with the broad policy recommendations focusing on the staples of improved infrastructure and teacher professional development along with technical and pedagogical supports. It did however note that the *Computer Studies* module initiated in 1980 had not been formally updated since then. Overall the Inspectorate Evaluation (DES, 2008c) reflected the limited impact of ICTs at post-primary level in the Irish context consistent with Mulkeen (2003), the OECD (2004a), Cosgrove et al. (2005), the EU (2006) and O'Shea et al. (2006) as documented previously.

The late 2000's saw a period of renewed interest attributable at least in part to the presence of an enthusiastic Minister for Education, reflective of the influence of Minister Michael Martin in respect of Schools IT2000. The *National Development Plan (2007-2013)* promised investment of €252 million for ICT in schools which underpinned the publication of *Investing Effectively in ICT in Schools 2008 – 2013* (DES, 2008b). As funding was cut by €100 million due to the onset of economic recession *Smart Schools = Smart Economy* (DES, 2009) proposed activity based on a revised budget of €152 million. Although not raised to 'full' policy status *Smart Schools = Smart Economy* (DES, 2009) did provide a backdrop to ongoing expenditure on infrastructure and other activities undertaken by the NCTE in the aftermath of its publication.

Investing Effectively in ICT in Schools 2008 – 2013 (DES, 2008b) presented a realistic appraisal of the situation at the time with regard to the then current status and impact of technology in Irish schools, in contrast to its predecessor the Blueprint which employed language of 'exceptional progress' and 'cutting edge' (DES, 2001, p.2) out of kilter with the reality of the scenario at the school and classroom level at the time. The *Investing Effectively* report identified seven main areas for investment: professional development encompassing both pre and in-service and whole school based approaches, software and digital content, ICT infrastructure, broadband, technical support, cohesive implementation structures and supports and a research dimension based on establishing models of best practice through innovative projects in schools. The latter may be considered a case of 'SIP revisited.' Although providing focused recommendations in relation to each of these seven areas there was no direct attention to issues of curriculum and assessment. The recommendations in terms of expenditure were heavily leaden towards the infrastructural with infrastructure, broadband and technical support accounting for €255 million of a total proposed spend of €337 million with the remaining monies dedicated to continuing professional development, software and digital content, research and support services. In light of the findings of this study the *Investing Effectively* report, although not without its shortcomings, provided the most robust and plausible recommendations for ICTs in Irish education to date although due to budget cuts it did not make it to the implementation stage in what may be considered as another 'opportunity lost.'

The *Smart Schools = Smart Economy* (DES, 2009) Advisory Group and report provides a very concrete example of the external/industrial influence in respect of ICTs in education policy. Comprised mainly of representatives from the ICT business sector (supplemented by DES and NCTE representation) this Group was founded in the aftermath of *Investing Effectively* when the funding of €252 million initially committed was no longer available. This report emphasised the ‘economic and social imperative’ (DES, 2009, p.14) and identified five priority areas: infrastructure including technical support and provision of a virtual learning environment (VLE), teacher professional development, ICT planning and budgeting, digital content growth and enhanced broadband for schools. Whilst focusing on mainly infrastructural elements the report did recognise and endorse the NCCA’s (2007) *ICT Framework* ‘as an enabling framework for teachers to embed ICT in curriculum and assessment’ (DES, 2009, p.22). In addition the report proposed an ‘ongoing role for the ICT industry’ (DES, 2009, p.36) including in relation to teacher professional development. Much of the funding committed via *Smart Schools = Smart Economy* (DES, 2009) was allocated to schools in the years subsequent to its publication where the emphasis as set out in the report was on the acquisition of ‘teaching computers and digital projectors’ (DES, 2009, p.27).

Conclusion

As outlined above a number of publications have set out recommendations for the future of technology in Irish education in the period 2008-2009. In light of the findings of this study a common shortcoming in these recommendations has been the continued attention to the ICT dimension rather than to the teaching and learning dimension. This is manifest in a number of ways: via the continued emphasis on infrastructure related provisions and the lack of attention to issues of context at school and system levels as mediated and influenced by State curriculum and assessment requirements. This may be understood in the context of fragmentation whereby issues of curriculum and assessment are considered beyond the remit of a publication or group. Thus recent proposals may be seen as somewhat off a continuance of the techno-centric/innovation-focused approach enacted in Schools IT2000 via its twin emphasis on infrastructure provision and training of teachers. As noted previously neither of the groups responsible for either *Investing Effectively in ICT in Schools 2008 – 2013* (DES, 2008b) or *Smart Schools = Smart Economy* (DES, 2009) included representation from the NCCA. The provision of funding to schools against the

backdrop of *Smart Schools = Smart Economy* (DES, 2009) reflects the continuance of priorities identified previously and in this context it can be argued that the ‘policy reformulation and broadening phase’ as envisaged by Conway and Brennan-Freeman (2009) did not materialise. This was reflected in the *Third Report of the Organisational Review Programme* (Department of Public Expenditure and Reform, 2012, p.28) which focused on the work of the DES and noted the slowness of the Department in ‘developing coherence in ICT usage in schools, particularly integration into the curriculum.’ More generally this report noted the engagement of the Department with short-term and operational issues to the detriment of strategic thinking and the need to ‘articulate a vision for the education system which reflects the philosophy of the systemic and integrated nature of education.’ In this regard the challenges identified by the OECD (1991) and Cromien (2000) were found to be still very much in play with respect to the work of the DES as recently as 2012. However the proposed Junior Cycle reforms (DES, 2012) provide new hopes for the ICT dimension being underpinned by recognition that change is more complex than has been previously articulated in the Irish context including the significance of the curriculum and assessment dimensions which shape the contexts of Irish education. These proposals reflect the ‘knowledge creation’ paradigm in the context of ICT in the school curriculum as identified by Law (2009, p.22) drawing on the work of UNESCO (2008). This paradigm focuses on ICT as an agent of curriculum and pedagogical change to foster students’ development of 21st century skills and represents a progression from the ‘technological literacy’ and ‘knowledge deepening’ paradigms which have been evident in the Irish context to date: ‘technological literacy’ being concerned with computer literacy as a subject and ‘knowledge deepening’ with using ICT to support learning in different school subjects, in effect ‘integration’ as proposed within Schools IT2000.

This chapter has utilised Bruce’s (1993) framework for discourses on social change (*innovation-focused v. social system-focused*) as a frame of reference for developments with respect to Schools IT2000. It is argued that in light of its emphasis on the provision of infrastructure and basic skills for teachers coupled with a lack of attention to school contextual factors Schools IT2000 prioritised an innovative over a social practice discourse. The adoption of an approach reflective of such a discourse can be understood in terms of the underpinning political and economic imperatives: provision of infrastructure and basic skills for teachers was more achievable in the short term and provided very visible

outcomes which were important in terms of justifying the related expenditure, attracting attention to the initiative, as well as ensuring its general visibility by the partners in education as well as beyond the education community. However problematically the innovative discourse over simplifies the conditions necessary for educational reform by failing to acknowledge and address the complex dynamic which results when an innovation is placed in an educational setting. This perspective assumes that each context is neutral and that the technology rather than the resulting interactions and social process gives rise to improvement and to the intended changes in practice. The limitations of this oversimplification can be understood as reflected in the limited impacts which resulted as a consequence of Schools IT2000.

The framing of the analysis of Schools IT2000 in the context of these competing discourses draws attention to the need for a more critical analysis in respect of the desired orientation of technology policy for schools. Specifically this reflects the need for a more socially and politically aware understanding of schools and for a historical understanding of technology and instructional practices. Furthermore it reflects the necessity for more focus on the resultant non-technological processes than on the technological artifact as might be evident from enhanced attention to contextual, and teacher related considerations. Whilst each discourse has its own relevance the real strength of this framework emerges when both the innovative and the social practice perspectives are taken seriously as each provide policy makers with competing yet, in the context of implementation, complementary perspectives on the conditions necessary for technology integration in schools. As acknowledged by Bruce (1993) neither discourse alone can account for all important aspects of technological and social change. Whilst the technological artifact can provide the impetus or starting point the interpretation, evaluation, selection and modification is effectively a re-creation of the innovation by the user. In relation to open-ended innovations in education (such as the concept of 'integration' in Schools IT2000) a key assumption is that the social values of the users and the policy developers will be the same. However it is probable that open-ended innovations are flexible enough to be re-created in the image of the traditional classroom or practice they were intended to supplant. This was reflected in the context of Schools IT2000 to the effect that it enabled schools to do the same things as before, only 'better'. Overall the realization process indicates that the effect of an innovation on a social system is not the produce of either the innovation or the social system alone. Thus the nature of the

resultant innovation must be understood as a process shaped by the users in the boundaries of their setting or context. Bruce (1993) posits that rather than thinking of interactions as being between a fixed innovation and a static social context we should view the process of innovation as a *transaction* with the innovation and social context modifying each other in a dynamic system of interrelationships. This perspective is instructive to policy makers in understanding the interactions between technologies, teachers and the contexts in which they interact thus leading to a further understanding of how such transactions can be usefully supported and enabled within the micro and marco contexts of the system of education. This can be achieved through a process of continuous collaborative learning for teachers (as policy brokers) which allows them to address the challenges and dilemmas raised by ICT relating to their own practice, role, identity and knowledge in the confines and contexts of their own school settings and against the backdrop of an understanding of established instructional practices. Zhao et al. (2006) present evidence that such approaches which are more strongly grounded in the social practices discourse than initial policy efforts (which prioritised infrastructure and hardware and thus were premised on an innovative discourse) have emerged as a ‘third wave’ of technology plans. Typically these plans emphasise ‘a more contextual understanding of ICT integration within the confines and supports of particular school cultures’ (p.674).

Chapter 9 Conclusion

Introduction

This thesis began by addressing the broad context of educational policy making in Ireland. A number of the features of this context were reflected in the formulation and implementation of Schools IT2000, in particular the centralised approach to policy development and implementation, the key role played by senior civil servants and the Minister for Education, the influence of factors and actors external to education, the lack of a clearly established educational philosophy to underpin the initiative and the effects of structural fragmentation between the main agencies responsible for implementation were evident in respect of Schools IT2000. This thesis has also detailed and developed the dominant discourses evident in the literature in respect of ICT policy and educational change. The significance of the broad contextual factors and the dominant ICT policy discourses as they apply to Schools IT2000 has been reflected and developed in the preceding discussion chapter.

The thesis also addressed the specific technology in education context in the Irish setting by detailing the history and chronology of related developments from the early 1970's. The influence of 'education for the economy' and human capital formation was evident at the time of growing interest (mid 1990's) in this area of educational provision. The 'external' influence was also evident at this time by virtue of a number of influential EU and OECD publications which reflected an emergent neo-liberal agenda in respect of the 'information society.' These influences had a more significant impact than the localised attempts by the CESI to establish technology based education across the Irish schools system from the early 1970's on and the proposals contained within Schools IT2000 can be traced back to the Department of Education Submission to the Information Society Steering Committee (1996).

The role for technology in Irish education has been the subject of much debate amongst an interested minority as reflected in the many submissions and draft proposals produced by the CESI in the decades preceding the establishment of Schools IT2000. Whilst inevitably many possibilities have been considered there has been no firm resolution to the questions of place, form and content which have enveloped consideration of the potential roles of

technology in Irish education linked to a clearly established and articulated educational rationale. Schools IT2000 did not address these issues being based on a vague aspiration towards ‘integration’ coupled with an acknowledgement of wider possibilities via the ‘catalytic rationale.’ As such the questions relating to the rationale and role for technology in Irish education are still very much unresolved.

This thesis has argued that Schools IT2000 enacted a techno-centric/innovation-focused approach to policy and policy implementation characterised by an emphasis on the provision of infrastructure and the unstated assumption that such provision coupled with basic IT skills for teachers would lead to worthwhile outcomes in respect of ‘integration’ and student ‘computer literacy.’ A lack of attention to school and teacher context, an over reliance on pilot projects as a means towards illustrating and achieving system wide implementation and impact and a lack of attention to internal evaluation and research are advanced as further characteristics of this approach. It is argued that this approach was heavily influenced by external and political factors such that Schools IT2000 was underpinned by economic and political imperatives rather than by a robust educational rationale. In the context of the techno-centric/innovation-focused approach there is an evident juxtaposition between the complexity of the interplay of factors necessary to achieve a meaningful impact of technology in educational contexts and the simplicity of the approach taken to achieving it in this case.

In spite of its limitations Schools IT2000 is still the most significant policy development in respect of ICTs in Irish education given the missed opportunities and inertia of the follow-up period. Schools IT2000 has ‘cast the mould’ in this regard and recent policy proposals have continued to emphasise technological rather than teaching and learning dimensions.

Summary of Findings

Summary of Findings relating to Policy Development

Schools IT2000 arose out of the work of the DES ICT Steering Group appointed by the then Minister for Education Niamh Bhreathnach to propose a policy initiative in this area of educational provision. The policy development process was characterised by a tight timeframe as there was a clear sense of urgency at this time regarding ICT policy for schools. Uncertainty regarding the availability of funding meant that the scope of the

initiative was initially unclear. This coloured the development stage with significant funding (£30 million) only committed at a stage when most of the deliberations by the DES ICT Steering Group regarding potential policy directions had taken place. The work of this group was underpinned by an understanding of the challenges associated with the educational use of ICTs and the proposals considered advocated an incremental rather than system-wide approach to roll-out, the desirability of a training needs analysis for teachers and the need for curricular revisions to support implementation at the school level thus implying a key role for the NCCA.

Whilst the key elements of policy and the structures considered by the DES ICT Steering Group remained relatively constant over the developmental process (aside from the changes in associated terminology or nomenclature) there was some adjustment to these proposals by key figures from within the DES who had the responsibility and authority for finalising recommendations to the Minister for Education. Most significantly this led to a policy based on a system-wide rather than on a phased rollout with the emphasis on the provision of infrastructure and basic teacher skills rather than on the establishment and replication of worthwhile practice by seeding activity in some schools. This resulted in an approach to policy implementation somewhat at odds with the proposals considered by the DES ICT Steering Group reflecting a less sophisticated perspective on the conditions necessary for ICTs to impact at the school and classroom levels.

Summary of Findings relating to Policy Influences

The initial drive to implement technology within education was borne out of pressure from outside the education community with the business/industrial influence being particularly significant. A number of European initiatives and the Information Society Commission were also influential at a time of greater openness to ICTs within the DES. Ireland's poor ranking in terms of readiness for the information age struck a chord with DES personnel where internally the drive for technology originated from the administrative side of the Department. Heightened levels of DES attention to ICTs in post-primary education were influenced significantly by a 'political imperative' to introduce technology into schools so as to be active and progressive in this area of educational provision. The interest and influence of Minister Michael Martin and his advisors is a significant aspect of the political imperative. This political imperative was influenced and driven by forces external to the

field of education and premised on the basis of an economic rather than educational rationale. This imperative resulted in, amongst other factors, a short term focus and an emphasis on the achievement of quantitatively measurable outcomes e.g. numbers of computers in schools and numbers of teachers trained. The CESI was prominent in lobbying for technology in schools during times of limited interest and resources but as a body was not consulted at this time when attitudes towards technology in schools were changing. It did however exert influence by virtue of the prominent roles played by some of its members. This lack of consultation is reflective of a general non-adherence to partnership and consultation as expedience was the overriding priority.

Policy development and implementation have also been influenced by multiple contexts with the macro or systems level context, the micro or school context, the teacher context and the industrial relations context emerging from the interview data.

The macro or system level context relates to the norms and cultures of the DES. A cautious approach, especially in relation to long term expenditure, an emphasis on the short term as driven by the political imperative, a dearth of leadership in relation to policy making, a weak but growing culture of educational policy being based on research, a centralised approach to policy management and implementation, and a poor track record in relation to policy evaluation and dissemination were the most significant features of this context. The presence of a multitude of agencies each with their own narrow remit and area of responsibility, coupled with a culture of each agency working independently, was also a significant aspect of the broader macro context effecting policy implementation.

The micro or school context was significant in shaping policy implementation. The influence of State curriculum and assessment, the organisational culture of schools being subject and classroom based and a reliance on a transmission model of teaching were the most salient features outlined. Whilst school context was identified by interviewees as affecting implementation this did not feature prominently within policy deliberations or in the resultant policy. This may be related to the version of change adopted, with ICTs being seen as a technical rather than as a curricular, cultural or organisational innovation.

The teacher context was portrayed as being influenced by the micro/school context and by individual teacher attitudes to technology. Although the teacher context was recognised as directly affecting implementation at the classroom level there was limited consideration of this as reflected by the virtual non-involvement of teachers within the policy making process and the one size fits all approach to policy implementation including teacher professional development and support.

The industrial relations context was seen as impacting on the implementation of ICT by virtue of teacher union dominance of any debate regarding assessment via their significant presence at representational fora. Assessment is perceived as a key driver of what happens in schools including in respect of ICTs.

Summary of Findings relating to Policy Implementation and Outcomes

The NCTE achieved implementation of the main policy strands relative to the outcomes specified in the Schools IT2000 document. However its work was impacted upon by limited resourcing, short term planning and a lack of clarity regarding its precise role (policy implementation versus formulation). This lack of clarity at times resulted in a strained relationship with the DES and can be traced back to the manner in which Schools IT2000 and its associated structures were established with little time for consideration of the associated detail. The varying nature of relationships between the NCTE and other agencies including the DES and the NCCA was viewed as influencing its ability to fulfil its perceived remit at different stages.

The approach taken towards infrastructure provision (TII) was viewed as appropriate as it fitted with the culture of schools being accustomed to receiving funding from the State and as it compensated for some of the policy shortcomings, specifically in relation to technical support. However there were drawbacks due to the political imperative which dictated a short term focus with an emphasis on getting the technology into schools to the detriment of planned supporting structures and prior documentation. This was in turn reflected by the fact that schools' approaches to purchasing were based on economic and technology related considerations rather than on desired educational outcomes. Generally the provision of infrastructure did not lead to enhanced ICT use across the curriculum as a consequence in

part of limited clarity regarding the teaching, learning and assessment which would result from the use of this newly acquired technology.

Whilst the teacher training strand (TSI) brought some teachers to a level of ICT skills equipping teachers with computer skills did not necessarily mean that they were able to transfer those skills to a teaching or learning context. The pressure to meet the stated targets in respect of the numbers of teachers trained brought significant pressure to bear on the NCTE which was driven by the political imperative. This allowed for limited planning and consideration of the detail pertaining to the courses with the effect that the post-primary provision was viewed as limited in scope and approach.

The school support strand (SSI) consisted of SIP, the network of IT Advisors and Scoilnet. The initial scope of the SIP project in terms of participant numbers was increased at the request of the Minister for Education. This increase made the management of the project more difficult. Although SIP was perceived positively there were limitations in respect of curriculum relevance and sustainability related to the pilot-project approach employed. The extent of ongoing evaluation arose as an issue in respect of the SIP project as did delayed dissemination of the evaluation which was conducted. The lack of a follow-up second phase was a major shortcoming of the SIP initiative and hence failed to build on the expertise developed over the course of the project.

The model of localised support underpinning the IT Advisors was viewed positively but there were shortcomings in its implementation due to a lack of critical mass, lack of clarity regarding the Advisors role and management issues which in some cases led to tensions between the NCTE and the Director of the Education Centres where the IT Advisor was based. Some Advisors interacted usefully with the schools in their catchment area although generally the potential of this model of support was not realised due in part to their individual skill sets and their lack of initiative. The delay in appointment of the IT Advisors contributed to their limited effectiveness at the school level.

Scoilnet achieved its remit to limited effect due to a lack of updated content linked to the manner in which it was administered at varying stages of its existence. The involvement of

Intel at one particular stage in its life cycle created tensions between the DES/NCTE/Intel with respect to the running of the site and the ownership of the content.

The main impacts arising from Schools IT2000 were the provision of infrastructure to schools and the up-skilling of teachers in terms of basic computer skills. The establishment of a formal policy and associated structures were seen as ends in themselves. The impact at the school and classroom level was uneven with little evidence of positive system wide implementation of ICT. The lack of provision for technical support was the most significant limitation of this policy. This was due to the costs involved and served to limit use by teachers at the school level.

The official evaluation of Schools IT2000 conducted by the NPADC was limited in terms of both process and substance. It was viewed as ‘political’ in that it provided only statistical data which could be used to justify the policy and associated spending. As such it provided little useful formative data to reflect what was happening in schools and thus inform future policy. The NPADC itself was seen as ‘political’ in that it provided a form of appeasement for partners who were discommoded by the lack of consultation at the policy development stage. The NCTE’s own capacity for internal evaluation was limited by its operational focus in response to ministerial pressures to meet the targets set for provision of infrastructure and teacher training.

The follow up *Blueprint for the Future of ICT in Irish Education* (DES, 2001) committed further funding so as to in-effect continue Schools IT2000 without any specific new targets or objectives. There were limitations to how this policy was produced and to the resultant end product both in terms of substance and physical presentation with a perceived mismatch between the content and the illustrations included. The change in Minister for Education at this time had a significant negative impact with an incoming Minister who relative to his predecessor had little interest in this area of educational provision.

Opportunities Lost: Recommendations for Future Policies in Respect of ICTs

Whilst the preceding findings and analysis has questioned the motives and the means by which Schools IT2000 was enacted it nonetheless provided an opportunity for reform which although not fully capitalised on has provided a number of legacies and lessons of

relevance to any future policy initiatives in this area. In this regard the researcher is struck by a sense of ‘what might have been’ or of ‘opportunities lost’ leading to the identification of a number of issues emerging from the findings and analysis which have clear implications for future policy and policy makers in this area. These are:

1. The need to recognise the significance of context and the complexity of the intersection between technology and education.
2. The need to establish an agreed underpinning philosophy and educational purpose in advance of any future technology in education initiative.
3. The need to develop a co-ordinated approach to policy development and implementation.
4. The need to provide meaningful professional development for teachers in relation to ICTs.
5. The need to provide localised ICT supports for teachers and schools.
6. The need to learn from experience by drawing on the lessons of the past in respect of any future initiatives and by prioritising research and ongoing internal evaluation within future endeavors.

Each of the issues identified above will be addressed in turn in the sections which follow:

1. The need to recognise the significance of context and the complexity of the intersection between technology and education.

This thesis has argued that Schools IT2000 was underpinned by economic and political (rather than by educational) imperatives which led to the adoption of a techno-centric/innovation-focused approach in respect of implementation characterised by a focus on the provision of infrastructure and basis IT skills for teachers. As developed previously the lack of recognition and attention to context is a significant aspect of this approach. Thus Schools IT2000 did not reflect the complexity of its undertaking but instead sought to fit ICT within existing curriculum and assessment structures based on the assumption that the provision of computers and teacher skills would lead to ‘integration.’ This is consistent with Cornbleth’s (1990, p.34) ‘technocratic approach’ which tends towards ‘perpetuation of the status quo.’ Reflecting the limitations of this approach (based on the resulting outcomes) it is suggested that any future initiative predicated on ICT should to be conceptualised and presented as a curricular rather than as a technical innovation which sets

out to address teaching and learning as its primary focus. In the Irish context ‘coverage’ of State curriculum and student assessment are long acknowledged drivers of what happens within schools as addressed in Chapter 2.

An alternative conceptualisation suggests that what is required is in fact not another ICT specific policy or similar but a fundamental review of education for the 21st century which encompasses consideration of the role of ICT within such a modern system of education. This would involve establishment and recourse to the underpinning philosophy of education (issue 2) in a consideration of what constitutes teaching, learning and assessment in the 21st century. In short this involves taking education as the starting point rather than technology, whereas the opposite was the case with Schools IT2000. Such an approach has been espoused in the *Australian Digital Education Revolution* (Australian Government, 2008) which viewed technology as a means towards modernising their system of education. In similar vein *Transforming American Education: Learning Powered by Technology* (U.S. Department of Education, 2010) also cast technology integration in terms of a model for 21st century learning. A more fundamentalist approach such as this may be warranted in the Irish context especially considering the ‘conserving influence of the prevailing ICT use’ as highlighted by McGarr (2009, p.1106). The reconceptualisation of schools as learning organisations in which teachers and students are active partners in learning is likely to apply in any revised model of education facilitated by technology (OECD, 2004a). This in turn has implications for teacher professional development (issue 4).

A further key understanding is that the infusion of technology with education is essentially about educational change. Grunberg and Summers (1992) established developments in IT use as part of the broader field of educational change in general reflecting the complexity of implementation and the fact that many barriers to ICT are barriers to change in general. The *social-system focused* discourse (Bruce, 1993) is instructive as regards the nature of the change process recognising how innovations are re-interpreted and socially constructed at the school level. Thus the social practice discourse gives primacy to teachers (as brokers of change) and schools contexts as dynamic environments in which the change process takes place. This is in contrast to the straightforward linear nature of events as implied by the innovative discourse, where the technology itself is seen as the key enabler. Greater recognition and attention to social practice related issues is hence warranted in any further

technology initiatives which set out to reflect a meaningful understanding of educational change. Such an understanding is a necessary prerequisite to the realisation of such a change process in practice.

2. The need to establish an agreed underpinning philosophy and educational purpose in advance of any future technology in education initiative.

As detailed previously Schools IT2000 pursued an aspiration towards ‘integration’ but the lack of clarity as to the meaning of ‘integration’ undermined its potential for meaningful impact and in the absence of clarity numerous teacher conceptions emerged as evidenced by O’Doherty et al. (2001) and Galvin (2002). In this context it is suggested that any future technology in education initiative is underpinned by an agreed philosophy which in turn guides and informs a clear statement of role and purpose thus addressing the concerns raised by Galvin (2008, p.2) in respect of ‘what we mean by doing ICT.’ The deliberate emphasis on an ‘agreed’ philosophy implies a broader base to ICT related decision making than has been the case previously in the Irish context as reflected by the centralised approach outlined above. This also relates to issue 3 below in respect of policy development and implementation. Establishing clarity on the ‘intention and outcome of change’ has been advanced by the NCCA (2009, p.13) as a key success factor in the context of leading and supporting change.

3. The need to develop a co-ordinated approach to policy development and implementation.

The need to develop a co-ordinated approach to policy development and implementation arises out of two of the most prominent themes reflected over the course of this work: the neglect of partnership/participative decision making and the prevalence of fragmentation. Whilst not necessarily recommending a strict adherence to the partnership approach (given the limitations detailed in Chapter 2) the perceived advantages of broaden the base of decision making in respect of ICT emerged from the data – this is a counterpoint to the top-down non-consultative nature of processes to date characterised by a high degree of DES control. These characteristics are evident in the account of policy development for Schools IT2000 presented in Chapter 5. Fragmentation and the nature of relationships were prominent at the implementation stage in particular. A more co-ordinated joined up

approach to development and implementation might serve to address the tensions and turf wars which were a feature of Schools IT2000 as well as contributing positively to the potential impact of any similar or follow-up initiative. Goldman (2005) recognises that collaborations and partnerships across organisations or agencies are critical to educational improvement but that they are difficult to launch and sustain with participants needing to establish a culture of collaboration and mutual respect, as well as shared meanings, goals and norms for interaction. In recognising the need for ‘alignment’ of key policy actors/agencies Austin and Anderson (2008, p.170) emphasise the role of ‘strategic leadership’ in creating a shared vision and sense of collective responsibility: in their work co-ordination and consultation were experienced as underpinning complex change across multiple-partners. In the context of technology policy for Irish schools a more central role for the NCCA is warranted especially if as suggested above ICT is reconceptualised as a curriculum or teaching and learning initiative.

4. The need to provide meaningful professional development for teachers.

Criticisms of the professional development for teachers enacted via Schools IT2000 emerged prominently from the data as reflected in the findings presented in Chapter 7. Whilst teachers were initially enthusiastic and attended training in significant numbers in their own free time the nature of the training and the manner in which it was provided was viewed as failing to capitalise on their potential to utilise technology and to reinforce the mindset that educational ICTs was effectively about computer skills. Limitations in respect of the teacher training can be traced back to the influence of the political imperative and the resultant emphasis on delivery and short-term targets over and above all other considerations. The approach taken resonates with the ‘deficit model’ of teacher knowledge as identified by Zhao and Conway (2001, p.22) underpinned by a ‘decontextualised notion of learning’ where teachers learned skills separate from the context of usage. Against this backdrop the need for additional and alternative forms of professional development (as distinct from training) emerged from the data. Such professional development was seen as being most useful when differentiated by school and teacher context (linking back to issue 1) and school based (linking with issue 5 in respect of localised supports).

The lack of professional development opportunities for teachers was identified as a particular feature of the Irish context by the OECD (2004a). In addition Shiel et al. (2009, p.23) identified 'ICT skills' as the most unmet professional development need being identified by 34% of Irish teachers in the OECD Teaching and Learning International Study (TALIS). This suggests that there is still a gap between teacher needs as perceived by themselves and existing cpd provision. The reconceptualisation of the school as learning organisation (as addressed in issue 1) implies that teachers adopt a different perception of themselves moving away from an individualistic and isolated version who engages in little dialogue or activity beyond the classroom to one who places a high value on sharing with colleagues becoming involved with activities such as peer observation and mentoring and communities of practice. However Shiel et al. (2009) reflect the particular challenge of this in the Irish context with the vast majority of professional development undertaken being by means of attendance at courses and workshops with much less involvement in mentoring and peer observation by comparison with other countries in the study. Irish teachers were also found to be less supportive of constructivist beliefs about teaching (associated with the use of ICTs) and more supportive about direct transmission beliefs than their counterparts in other countries. This again signifies the significance of prevailing instructional practices in the context of Irish education and ICT. The greater prevalence of administrative rather than instructional leadership amongst Irish principals as indicated in this TALIS study is a further reflection of the technicist approach seen as prevalent within Irish education (as detailed in Chapter 2).

Overall the need to broaden the base of cpd provision in respect of ICT emerges from the data and related literature. In addition to addressing teacher skills there is a need to empower teachers to engage in professional learning activities with their colleagues at the school and classroom level (Law, 2009). In this regard capacity building by collaborative means within the professional community and the concept of schools as learning organisations emerges strongly from the literature on organisational change as illustrated in the work of DuFour (2004), Goldman (2005), Fullan et al. (2006), Austin and Anderson (2008) and Fullan (2010).

Goldman (2005) describes human capacity building as the core of educational improvement at all levels within the education system but especially at those levels in closest proximity

to students (i.e. teachers). Consistent with the social practice discourse she sees change as initiated, sustained and carried through systems by actors in a process that builds a culture of collaborative inquiry. Social interactions enabled in structures such as learning communities, practitioner networks or study groups are proposed by Goldman (2005) as facilitating change as through collaborative inquiry teachers have opportunities to participate in learning experiences that parallel effective student learning experiences. DuFour (2004), Fullan et al. (2006) and Fullan (2010) are strong advocates of professional learning in the context of educational improvement and change. Fullan et al. (2006) draw a number of conclusions regarding the factors underpinning successful large scale reform including the role that professional learning communities play at the school level in establishing cultures where teachers learn from each other and from school leaders and where teachers collaborate for continuous improvement. Learning in context is advanced as 'key' as is the fostering and maintenance of professional learning communities by the wider education system. Fullan (2010) also advocates professional learning communities but distinguishes between individual capacity and collective capacity. Individual capacity or development is seen as necessary but insufficient: 'individual capacity thrives if it is integrated with strategies and experiences that foster collective capacity' (p.87) (such as having effective leaders, good colleagues, and opportunities to learn and to build collective efficacy that has a positive impact on students). The significance of leadership in the context of communities of practice is noted by DuFour (2004), Fullan et al. (2006), Austin and Anderson (2008) and Fullan (2010). DuFour (2004) notes the particular significance of leadership in the context of schools transitioning to professional learning communities; a process which can entail conflict and anxiety.

Overall the literature advocates professional learning through engagement in professional learning communities in the context of schools as learning organisations. Engaging teachers in professional learning activities with their colleagues represents a change in the culture and practice of Irish teachers which illustrates the non-trivial nature of this undertaking, in contrast to the approach taken in Schools IT2000 via its emphasis on basic skills. It is recognised that any future cpd support for teachers should be part of a coherent national framework as proposed by Granville (2005). Such a framework was proposed as necessary in bringing coherence and clarity to cpd provision at post-primary level.

5. The need to provide localised supports for teachers and schools.

The provision of localised supports is seen as complimentary to professional development activities for teachers. Whilst the approach to pedagogical support in Schools IT2000 via the IT Advisors was the subject of criticism on the basis of scale, management and the initiative of some individual Advisors (as reflected in Chapter 7) Murchan et al. (2005) present evidence of a more effective implementation of such an approach in the Irish context via the PCSP Cuiditheoir service. In addition the model of localised school based support is well grounded in the literature where the school is seen as the primary unit of change encompassing individual, organisational and managerial aspects (Smylie 1995; Collinson & Cook, 2001, Hatton, 2001). This suggests a flawed implementation in the particular version of the approach enacted via Schools IT2000 rather than a flawed approach per se. In light of the criticisms outlined above the DES (2008a) based on its own audit recommended discontinuance of the IT Advisors service in 2008:

The Steering Committee concluded that the effectiveness of the ICT Advisory Service was not clearly demonstrated having regard to the awareness and usage levels identified in the Inspectorate Survey. The feasibility of providing a service to all schools within the current resources is unrealistic...The Steering Committee concluded that the resources currently utilised by the ICT Advisory Service could be better employed in an alternative arrangement which would focus supports for ICT leadership and change within each school (DES, 2008a, p. 101).

The limitations with respect to this particular approach of localised support are instructive to future policy makers with regard to an alternative approach based on a similar model: as above issues relating to scale, role, management and the selection of Advisors emerged from this iteration. In this regard support for Schools Leaders and IT Co-ordinators can usefully sit alongside (rather than replace) a newly established alternative version of the localised IT Advisor. The necessity for other supports also emerged; particularly technical support which was seen as the major limitation of Schools IT2000 although there was recognition of the financial constraints involved. However funding for technical support would signify a genuine commitment and is a necessary prerequisite to a technology enabled system of education.

6. The need to learn from experience by drawing on the lessons of the past in respect of any future initiatives and by prioritising ongoing research and internal evaluation within future endeavors.

This final issue essentially addresses the research dimension both in respect of data and findings from previous initiatives and in respect of an inbuilt research dimension within any future initiative. This particular issue is informed by the difficulties experienced within Schools IT2000 in respect of the evaluation and dissemination of SIP and the associated failure to extend it to a second follow-up phase. In respect of SIP the failure to build ongoing evaluation into the project structures was attributed to a short term focus on delivering the project as dictated by the political imperative rather than on a longer term focus encompassing the gathering of data to inform future planning. Issues in relation to dissemination reflected the significance of relationships and fragmentation between the key agencies. Overall shortcomings in respect of evaluation and dissemination and the lack of a follow-up phase were understood as negating the impact and progress which may have arisen from this aspect of Schools IT2000.

More generally, the implications of limitations with respect to research, dissemination and follow-up in the case of Schools IT2000 may be understood in the lack of progression evident within the initiative illustrated by following the same initial threads or strands as a default, in the absence of research which informed otherwise. This was evident in the follow up Blueprint policy which reflected a continuance of the priorities identified in Schools IT2000. In the context of a policy vacuum it may mean consideration of the same or similar strategies as were enacted previously, in effect ‘starting all over’ with little or no obvious recourse to previous endeavors. ‘Lessons lost’ is another way of putting this: based on the evidence of Schools IT2000 it does not necessarily follow that past experience will inform future practice. In contrast, Goldman (2005) in addressing the educational improvement/change process outlines how educational improvement efforts need to be studied and documented so that they can contribute to the development of a systematic knowledge base about efforts to innovate, scale up practice and sustain such efforts. Likewise an improved understanding of the circumstances that facilitate and impede change can be fed into the design of future efforts to promote and sustain educational improvements. This insight can guide future policy makers with respect to planned research, dissemination and follow-up within any future policy provision. However the tendency for policy not to draw on a research basis is as noted in the broad context of Irish education (Chapter 2) and as reflected in the findings in respect of Schools IT2000 (Chapter 7).

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Appendix A– Semi-structured Interview Schedule – Phase 1

How has ICT policy for schools developed over the last twenty years?

The Schools IT2000 policy making process: key players and influences? Philosophy and underpinning rationale?

Response to the Schools IT2000 policy - the three strands: infrastructure, teacher skills, school support (incl. ScoilNet & SIP)?

How effective were the implementation structures: NCTE, Education Centres, ICT Policy Unit?

The role and contribution of the partners to ongoing policy formulation and implementation?

Evaluation of Schools IT2000? Role of NPADC? Response to findings?

What lessons have been learned from the implementation and evaluation of Schools IT2000?

Response to the Blueprint document?

Future directions: relationship between curriculum, assessment and ICT?

How do you see the role of ICT in schools and education?

What do you understand by ‘integration’? How has ‘integration’ been borne out in policy to-date?

How can ICT contribute usefully to effective teaching and learning?

Appendix B – Semi-structured Interview Schedule – Phase 2

Has the aim/role/purpose of ICTs in Irish post-primary education, as reflected in national policy, been clearly defined?

What have been the main influences in respect of ICT policy – both positive and negative?

What has been the effect, if any, of changes of Minister over the lifespan of ICT Policy?

Independent evaluations/DES Inspectors report would indicate that implementation has been problematic – why has this been the case?

What is the role of the NCTE? Other policy bodies?

How has the role and work of the NCTE evolved in a sustained period of ‘policy inertia’?

How would you see/describe the relationship between the NCTE and the DES/DES ICT Policy Co-ordinating Unit?

How much of what has been devised policy wise has been based on research or evidence?

How would you evaluate teacher professional development provision in respect of ICT – how has it evolved since SchoolsIT2000 – how should it evolve in the future?

How would you evaluate the provision of school support?

What factors should shape future policy? What should the main elements be?

Appendix C – Summary of Findings for Validation

Schools IT2000: A Policy Framework for the New Millennium (DES, 1997)

Keith Johnston 5th September 2013

Introduction & Purpose

This document contains a summary of the findings of a PhD research study which set out to analyse ICT policymaking processes and outcomes in the context of *Schools IT2000: A Policy Framework for the New Millennium* (DES, 1997). The data for this study (19 semi-structured interview transcripts) were approached from the theoretical perspective of interpretivism which recognises the significant role of the researcher in disentangling the multiple meanings and perspectives articulated by interviewees. Relevant documentary evidence was also drawn on which can be seen as bringing an element of triangulation to the study. Whilst some qualitative methodologists view any attempt to validate researcher findings or interpretations as inappropriate others including Creswell (2012) suggest that the credibility of interpretations can and should be validated through a number of processes, one such process being ‘member checking’ whereby the researcher asks interviewees to review a summary of the findings and to comment on their accuracy.

The purpose of this document is to facilitate such a process of validation. It contains three sections: section one addresses the policy development stage; section two details the perceived influences and drivers in relation to policy; and, section three focuses on the policy implementation stage. Taking guidance from Creswell (2012, p.259) the researcher wishes to establish ‘if the interpretations are fair and accurate’ in light of interviewees lived experiences of the policy initiative under review. As one of my interviewees you are invited to indicate general agreement or disagreement regarding the interpretations of data offered within each section and to elaborate as you wish in response to each section. Please place an ‘X’ in the box next to the statement which most closely represents your view in relation to each of the three sections and where possible provide an explanation for your selection. The paragraphs within each section are labelled alphabetically – you may wish to use these labels for ease of reference within your comments.

The researcher will reconsider certain interpretations in the event that strong alternative views are raised in respect of a particular finding either by one person or a number of persons. The researcher is also aware of the potential for this exercise to elicit further ‘mature reflections’ from individual respondents and hopes to incorporate such views in the final thesis where

possible. With a view to facilitating the completion of this work I would appreciate if you could provide feedback (by email to keith.johnston@tcd.ie) by September 16th 2013.

Section One: Policy Development

a) Schools IT2000 arose out of the work of the DES ICT Steering Group appointed by the then Minister for Education Niamh Bhreathnach to propose a policy initiative in this area of educational provision.

b) The policy development process was characterised by a tight timeframe as there was a clear sense of urgency at this time regarding ICT policy for schools. Uncertainty regarding the availability of funding meant that the scope of the initiative was initially unclear. This coloured the development stage with significant funding (£30 million) only committed at a stage when most of the deliberations by the DES ICT Steering Group regarding potential policy directions had taken place.

c) The work of this group was underpinned by an understanding of the challenges associated with the educational use of ICTs and the proposals considered advocated an incremental rather than system-wide approach to roll-out, the desirability of a training needs analysis for teachers and the need for curricular revisions to support implementation at the school level thus implying a key role for the NCCA.

d) Whilst the key elements of policy and the structures considered by the DES ICT Steering Group remained relatively constant over the developmental process (aside from the changes in associated terminology or nomenclature) there was some adjustment to these proposals by key figures from within the DES who had the responsibility and authority for finalising recommendations to the Minister for Education.

e) Most significantly this led to a policy based on a system-wide rather than on a phased rollout with the emphasis on the provision of infrastructure and basic teacher skills rather than on the establishment and replication of worthwhile practice by seeding activity in some schools.

f) This resulted in an approach to policy implementation somewhat at odds with the proposals considered by the DES ICT Steering Group reflecting a less sophisticated perspective on the conditions necessary for ICTs to impact at the school and classroom levels.

On balance I agree with the findings/interpretations offered above in respect of the Policy Development phase	
I agree in part with the findings/interpretations offered above in respect of the Policy Development phase	
On balance I disagree with the findings/interpretations offered above in respect of the Policy Development phase	
I have no basis on which to comment	
Please add comments below to support or elaborate on your choice of statement above as you wish:	

Section Two: Policy Influences

a) The initial drive to implement technology within education was borne out of pressure from outside the education community with the business/industrial influence being particularly significant. A number of European initiatives and the Information Society Commission were also influential at a time of greater openness to ICTs within the DES. Ireland's poor ranking in terms of readiness for the information age struck a chord with DES personnel where internally the drive for technology originated from the administrative side of the Department.

b) Heightened levels of DES attention to ICTs in post-primary education were influenced significantly by a 'political imperative' to introduce technology into schools so as to be active and progressive in this area of educational provision. The interest and influence of Minister Michael Martin and his advisors is a significant aspect of the political imperative. This political imperative was influenced and driven by forces external to the field of education and premised on the basis of an economic rather than educational rationale. This imperative resulted in, amongst other factors, a short term focus and an emphasis on the achievement of quantitatively measureable outcomes e.g. numbers of computers in schools and numbers of teachers trained.

c) The Computer Education Society of Ireland (CESI) was prominent in lobbying for technology in schools during times of limited interest and resources but was not consulted at this time when attitudes towards technology in schools were changing. This is reflective of a general non-adherence to partnership and consultation as expedience was the overriding priority.

d) Policy development and implementation have also been influenced by multiple contexts with the macro or systems level context, the micro or school context, the teacher context and the industrial relations context emerging from the interview data.

e) The macro or system level context relates to the norms and cultures of the DES. A cautious approach, especially in relation to long term expenditure, an emphasis on the short term as driven by the political imperative, a dearth of leadership in relation to policy making, a weak but growing culture of educational policy being based on research, a centralised approach to policy management and implementation, and a poor track record in relation to policy evaluation and dissemination were the most significant features of this context.

f) The presence of a multitude of agencies each with their own narrow remit and area of responsibility, coupled with a culture of each agency working independently, was also a significant aspect of the broader macro context effecting policy implementation.

g) The micro or school context was significant in shaping policy implementation. The influence of State curriculum and assessment, the organisational culture of schools being subject and classroom based and a reliance on a transmission model of teaching were the most salient features outlined. Whilst school context was identified by interviewees as affecting implementation this did not feature prominently within policy deliberations or in the resultant policy. This may be related to the version of change adopted, with ICTs being seen as a technical rather than as a curricular, cultural or organisational innovation.

h) The teacher context was portrayed as being influence by the micro/school context and by individual teacher attitudes to technology. Although the teacher context was recognised as directly affecting implementation at the classroom level there was limited consideration of this as reflected by the virtual non-involvement of teachers within the policy making process and the one size fits all approach to policy implementation including teacher professional development and support.

i) The industrial relations context was seen as impacting on the implementation of ICT by virtue of teacher union dominance of any debate regarding assessment via their significant presence at representational fora. Assessment is perceived as a key driver of what happens in schools including in respect of ICTs.

On balance I agree with the findings/interpretations offered above in respect of Policy Influences	
I agree in part with the findings/interpretations offered above in respect of the Policy Influences	
On balance I disagree with the findings/interpretations offered above in respect of the Policy Influences	
I have no basis on which to comment	
Please add comments below to support or elaborate on your choice of statement above as you wish:	

Section Three: Policy Implementation

This section addresses the implementation of Schools IT2000 focusing on the work of the NCTE, the realisation of the three policy strands and the perceived outcomes. The evaluation of the initiative and the follow-up *Blueprint for the Future of ICT in Irish Education* are also addressed.

a) The NCTE achieved implementation of the main policy strands relative to the outcomes specified in the Schools IT2000 document. However its work was impacted upon by limited resourcing, short term planning and a lack of clarity regarding its precise role (policy implementation versus formulation). This lack of clarity at times resulted in a strained relationship with the DES and can be traced back to the manner in which Schools IT2000 and its associated structures were established with little time for consideration of the associated detail. The varying nature of relationships between the NCTE and other agencies including the DES and the NCCA was viewed as influencing its ability to fulfill its perceived remit at different stages.

b) The approach taken towards infrastructure provision (TII) was viewed as appropriate as it fitted with the culture of schools being accustomed to receiving funding from the State and as it compensated for some of the policy shortcomings, specifically in relation to technical support. However there were drawbacks due to the political imperative which dictated a short term focus with an emphasis on getting the technology into schools to the detriment of planned supporting structures and prior documentation. This was in turn reflected by the fact that schools' approaches to purchasing were based on economic and technology related considerations rather than on desired educational outcomes. Generally the provision of infrastructure did not lead to enhanced ICT use across the curriculum as a consequence in part of limited clarity regarding the teaching, learning and assessment which would result from the use of this newly acquired technology.

c) Whilst the teacher training strand (TSI) brought some teachers to a level of ICT skills equipping teachers with computer skills did not necessarily mean that they were able to transfer those skills to a teaching or learning context. The pressure to meet the stated targets in respect of the numbers of teachers trained brought significant pressure to bear on the NCTE which was driven by the political imperative. This allowed for limited planning and consideration of the detail pertaining to the courses with the effect that the post-primary provision was viewed as limited in scope and approach.

The school support strand (SSI) consisted of SIP, the network of IT Advisors and Scoilnet:

d) The initial scope of the SIP project in terms of participant numbers was increased at the request of the Minister for Education. This increase made the management of the project more difficult. Although SIP was perceived positively there were limitations in respect of curriculum relevance and sustainability related to the pilot-project approach employed. The

extent of ongoing evaluation arose as an issue in respect of the SIP project as did delayed dissemination of the evaluation which was conducted. The lack of a follow-up second phase was a major shortcoming of the SIP initiative and hence failed to build on the expertise developed over the course of the project.

e) The model of localised support underpinning the IT Advisors was viewed positively but there were shortcomings in its implementation due to a lack of critical mass, lack of clarity regarding the Advisors role and management issues which in some cases led to tensions between the NCTE and the Director of the Education Centres where the IT Advisor was based. Some Advisors interacted usefully with the schools in their catchment area although generally the potential of this model of support was not realised due in part to their individual skill sets and their lack of initiative. The delay in appointment of the IT Advisors contributed to their limited effectiveness at the school level.

f) Scoilnet achieved its remit to limited effect due to a lack of updated content linked to the manner in which it was administered at varying stages of its existence. The involvement of Intel at one particular stage in its life cycle created tensions between the DES/NCTE/Intel with respect to the running of the site and the ownership of the content.

g) The main impacts arising from Schools IT2000 were the provision of infrastructure to schools and the up-skilling of teachers in terms of basic computer skills. The establishment of a formal policy and associated structures were seen as ends in themselves. The impact at the school and classroom level was uneven with little evidence of positive system wide implementation of ICT. The lack of provision for technical support was the most significant limitation of this policy. This was due to the costs involved and served to limit use by teachers at the school level.

h) The official evaluation of Schools IT2000 conducted by the NPADC was limited in terms of both process and substance. It was viewed as ‘political’ in that it provided only statistical data which could be used to justify the policy and associated spending. As such it provided little useful formative data to reflect what was happening in schools and thus inform future policy. The NPADC itself was seen as ‘political’ in that it provided a form of appeasement for partners who were discommoded by the lack of consultation at the policy development stage. The NCTE’s own capacity for internal evaluation was limited by its operational focus in response to ministerial pressures to meet the targets set for provision of infrastructure and teacher training.

i) The follow up *Blueprint for the Future of ICT in Irish Education* committed further

funding so as to in-effect continue Schools IT2000 without any specific new targets or objectives. There were limitations to how this policy was produced and to the resultant end product both in terms of substance and physical presentation with a perceived miss-match between the content and the illustrations included. The change in Minister for Education at this time had a significant negative impact with an incoming Minister who relative to his predecessor had little interest in this area of educational provision.

On balance I agree with the findings/interpretations offered above in respect of Policy Implementation	
I agree in part with the findings/interpretations offered above in respect of the Policy Implementation	
On balance I disagree with the findings/interpretations offered above in respect of the Policy Implementation	
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Please add comments below to support or elaborate on your choice of statement above as you wish:	