

TITLE PAGE

Is Learning Changing in the Digital Age?

**Exploring the Digital Age, Children's Media Culture, ICT Policy and
Critical Literacy**

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DECLARATION

I hereby certify that this material, which I now submit for assessment on the programme of study leading to the award of Doctorate in Education, is entirely my own work and has not been submitted for assessment for any academic purpose other than in partial fulfillment for that stated above.

Signed: Marian Henry Date: January 2012
Marian Henry

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ABSTRACT

In a DES Report (2008), it is claimed that “learning is changing” and that a pivotal force in bringing about this change is Information and Communications Technology (ICT). This thesis aims to explore this assertion.

The theoretical perspective is informed by both cultural and critical theory and is inspired by the work of Williams, Hall and Gramsci. This perspective allows for culture and the relations of power in the construction of knowledge, common sense and ideology to be foregrounded and explored. This work also asserts the need to reconceptualise our understanding of ICTs in society and education, from being ideologically inert technical tools, to recognising their central role as mediators of information and communication.

Acknowledging the dynamic and interactive relationship between education and society, the contested idea of change in contemporary society is explored through social theories of the Digital Age. That children have existing relationships with ICT outside of school has only recently come to the fore in ICT policy. The nature and diversity of these experiences are explored through a discussion of children’s media culture. The evolution of, and influences on, ICT education policy in the Irish context are examined as they represent the official response to the challenges and opportunities of the Digital Age. Given the level of change in the information and communications environment, it is asserted that this poses questions for what constitutes literacy in the Digital Age. A discussion of critical literacy, inspired by the work of Freire, and media literacy theory concludes the discussion and represents a way in which learning could change in the Digital Age.

Two phases of empirical research were conducted. Focus groups with children illustrated children's media culture, while a series of interviews with stakeholders and experts in the area of education explored learning, literacy and the Digital Age.

Education is an act of love, and thus an act of courage. It cannot fear the analysis of reality or, under pain of revealing itself as a farce, avoid creative discussion.

(Paulo Freire, 2008, p. 33)

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GLOSSARY OF ICT TERMS

- Bebo:** A social networking website launched in July 2005. The website's name is an acronym for *Blog Early, Blog Often*. Users receive a personal profile page where they can post blogs, photographs, music, videos and questionnaires to which other users may answer. Additionally, users may add others as friends, send them messages, and update their personal profiles to notify friends about themselves. Bebo is very similar to other social networking sites, mainly Facebook.
- Blogs:** Online journals written by individuals, ordinarily the unedited voice of a single person. The term derives from “web log”.
- Digital Camera:** a camera that takes video or still photographs, or both, digitally by recording images via an electronic image sensor.
- Digital Video Camera:** combines a digital camera and recording device in one unit. These are mobile and are widely used for television production, home movies, electronic news gathering (including citizen journalism), and similar applications.
- Email:** Electronic mail, commonly called email or e-mail, is a method of exchanging digital messages from an author to one or more recipients
- Facebook:** A popular social networking website launched in February 2004. Facebook has expanded its origins at Harvard to include all colleges, professional networks, regional networks, and the general public.
- Fizzbook:** A small rugged laptop aimed towards children and education. Constructed quite robustly, with an armoured plastic body, it is designed for use by children from eight to fourteen years of age.
- Hyperlink:** is a reference to a document that the reader can directly follow, or that is followed automatically.
- Interactive Whiteboard:** is a large interactive display that connects to a computer and projector. A projector projects the computer's desktop onto the board's surface where users control the computer using a pen, finger, stylus, or other device.
- Instant messaging (IM):** Real-time Internet communication via small pop-up windows with a transcription of the conversation.
- Massively multiplayer online role-playing game (MMORPG):** is a genre of role-playing video games in which a very large number of players interact with one another within a virtual game world. As in all RPGs, players assume the role of a character (often in a fantasy world) and take control over many of that character's actions. MMORPGs are distinguished from single-player or small multi-player RPGs by the number of players, and by the game's persistent world (usually hosted

by the game's publisher), which continues to exist and evolve while the player is offline and away from the game.

Nintendo DS: A portable game console produced by Nintendo, first released in 2004. A distinctive feature of the system is the presence of two separate LCD screens, the lower of which is a touchscreen, encompassed within a clamshell design. The Nintendo DS also features a built-in microphone and supports wireless standards, allowing players to interact with each other within short range, or online with the Nintendo Wi-Fi Connection service.

Nintendo DSi: A handheld game system created by Nintendo and launched in 2008. It is a seventh-generation console and features two digital cameras, supports internal and external content storage, and connects to an online store called the Nintendo DSi Shop. This new functionality was intended to facilitate personalisation, so as to encourage each member of a household to purchase an individual DSi.

Nintendo Wii: A home video game console. A distinguishing feature of the console is its wireless controller, the Wii Remote, which can be used as a handheld pointing device and detects movement in three dimensions. Another distinctive feature of the console is WiiConnect24, which enables it to receive messages and updates over the Internet while in standby mode.

Online predators: Paedophiles, sex offenders, and others with malicious intent who create false and/or misleading digital identities.

Playstation: a series of video game consoles created and developed by Sony Computer Entertainment. Spanning the fifth, sixth, and seventh generations of video gaming, the brand consists of a total of three consoles, a media center, an online service, a line of controllers and as well as multiple magazines.

Post/Upload: The action of contributing content to a website. One can post a comment to someone's blog entry, post links to interesting topics, and upload media files to media-sharing websites.

Real time: The flow of time in offline, real-life situations. The term is used to describe technology that actively updates and can sustain text-based or Internet communication at a rate very close to in-person interaction.

Search engine: A service organizing a vast array of information available on the Internet into an ordered list based on relevance to the keywords entered.

Skype: A peer-to-peer Internet telephony network that offers free voice and video conferencing.

Social networking site (SNS): A site, like Facebook, that connects communities of people in order to enable the flow of information among users. Using Web 2.0 technology, users create profiles and interact with and “friend” other users.

Twitter: A website which offers a social networking and microblogging service, enabling its users to send and read messages called *tweets*. Tweets are text-based posts of up to 140 characters displayed on the user's profile page.

USB: (Universal Serial Bus) is an industry standard developed in the mid-1990s that defines the cables, connectors and protocols used for connection, communication and power supply between computers and electronic devices.

USB microphone: a microphone that connects to a computer via USB connection.

Webcam: a video camera which feeds its images in real time to a computer or computer network. Their most popular use is the establishment of video links, permitting computers to act as videophones or videoconference stations. This common use as a video camera for the World Wide Web gave the webcam its name.

Web 2.0: The general term for the highly interactive, “read-write,” and user-centric web services that sprang up shortly after the Internet bubble burst in 2001.

Wiki: A stand alone Web page that functions much like an online Microsoft Word page, to which anyone can easily write or edit information.

Wikipedia: A Web 2.0 encyclopedia that is one of the most widely used websites for information about millions of topics. The articles can be edited or edited by anyone at any time. Topics are user created and content is user provided and user edited.

Xbox 360: The second video game console produced by Microsoft and is part of the seventh generation of video game consoles. Several major features of the Xbox 360 are its integrated Xbox Live service that allows players to compete online, download arcade games, game demos, trailers, TV shows, music and movies and its Windows Media Center multimedia capabilities.

YouTube: The most widely used video-sharing service in the world. YouTube is known for having an abundance of amateur video recordings and funny video clips.

INTRODUCTION

Learning is changing. A pivotal force in bringing about this change is the use of information and communications technology (ICT), which provides richer, more immediate, world-relevant educational resources and opportunities. (DES, 2008a, p. 1).

The Department of Education and Skills in Ireland advocates a positive perspective on the role of information and communications technologies (ICTs) in teaching and learning. Within the ICT Framework (2007), ICT is presented as a tool that can ‘add value’ to other curricular areas. In this supra-curricular positioning, ICT has the potential to enhance all existing areas of the curriculum, thereby representing a significant influence on the process of learning. It is presented as invigorating classroom activities, motivating learners and allowing more personalised ways of learning. To this end, there has been significant investment in developing the technological infrastructure in schools (DES, 2008a). The Department of the Inspectorate can also be understood to highly value the potential of ICT for enhancing teaching and learning. In their report on how ICTs are being used in Irish schools they stated:

That ICT should be an integral part of the education system is no longer a matter for debate” (DES, 2008b, p. 16)

The coupling of education and ICT is presented as common sense and this enthusiastic attitude to technology in education is evident in much writing in this area. Indeed, literature and research into educational technology is overpopulated with in-depth studies of small-

scale well-resourced projects that are as likely to indicate the ‘Hawthorne effect’¹ as any direct evidence that educational technology is living up to the claims made on its behalf (Buckingham, 2007). With the topic “no longer a matter for debate”, the focus of reports and future plans rests on ways of embedding ICT into the everyday practice of classrooms. That this has not happened yet (DES 2008b) is cause for concern and the blame can be cast in many directions, from “Luddite” teachers to out-of-date technology.

This thesis aims to make a contribution to the growing area of academic writing in relation to the use of ICTs in primary schools. Respectfully, it disagrees with the Department of the Inspectorate, asserting that there is in fact a *great need for debate*. Selwyn (2001) writes that educational technology is “a profoundly forward-looking field” often more concerned with the “state of the art” than the “state of the *actual*” (pp. 38-39). This work posits that there is a need to disengage from the supposedly inspirational and innovative uses of ICT and to explore this area from a broader perspective.

This prompts the question:

Is learning changing in the Digital Age?

The confident assertion that “learning is changing,” as used in a recent DES Report (2008), and that ICT plays a pivotal role in this change merits a deeper exploration. In this work, technology’s capacity to improve education is not taken for granted, rather it is problematised and explored from a broader social perspective. In taking the focus off *what* ICT can do in a specific learning setting and focusing instead on *how* it functions within contemporary society, it is possible to critically appreciate the complex relationship between education, society and ICT. The aim is not to criticise policy initiatives or the creative work

¹ The “Hawthorne Effect” refers to the sense that the novelty and enthusiasm that attends any innovation may itself be responsible for any benefits that it appears to bring about – and, in this sense, the positive gains that are sometimes traced to the influence of technology might well have occurred if a different innovation had been implemented in its place (Buckingham, 2007, p. 67).

undertaken by enthusiasts, rather it is to “re-politicise an increasingly de-politicised area of educational debate and analysis” by exploring and acknowledging issues of power, politics, control and conflict in contemporary society (Selwyn, 2011a, p. 5).

The theoretical perspective is presented first, grounding the study in a perspective that is influenced by the work of critical and cultural theorists Gramsci, Hall, and Williams. This lens allows for socially committed analysis that acknowledges the historical and political context in the construction of knowledge (Kearney, 1986). At the outset of this work, it is also asserted that ICTs should be understood not simply as “tools” but as mediators of information and communication. In this understanding, ICTs are to be conceived of as *media*.

The first two chapters constitute the review of literature and critical discussion of the research topic. Chapter One can be considered to be a “wide-angle shot”. It is broad in scope and considers some of the wider forces that influence how learning may be changing. The relationship between education and society is acknowledged in the Revised Curriculum for Primary Schools (1999a) as being “dynamic and interactive” claiming that “[E]ducation not only reflects society but is an influence in shaping its development” (p.6). This principle is relevant both in Chapters One and Two. Firstly, it implies that changes in the broader context of society have an influence on education. Thus, in order to understand the issue of ICT in education, the wider contexts of society, economics and culture need to be considered. Three social theories of the Digital Age are explored – the Post-Industrial Society, the political economy of the media, and the ideal of Public Sphere. Each theory has a different emphasis, highlighting the wide range of contested conceptions of how society is changing and also providing insights in relation to discussions of ICT policy and education in Chapter Two. The final section of Chapter One is a general exposition of theories and research relating to children’s media culture. This illustrates children’s experiences with ICT, outside of school.

Where Chapter One is the broad picture, Chapter Two could be referred to as the “close-up”. This chapter is focused on change and learning within formal education. The “dynamic and interactive” relationship between education and society is again prevalent in this discussion. Firstly, the evolution and underlying themes of ICT policies are discussed and this represents changes that have been implemented in education in relation specifically to ICT. The second part of Chapter Two is concerned with literacy. Given the discussion of information and communication implied with the use of ICT, it explores the idea that what it means to be literate in the Digital Age has changed. Built on a Freirian perspective that emphasises the fostering of critical consciousness through an expanded understanding of literacy, a vision for learning with and about ICT within education is presented.

Chapters One and Two inspire a curiosity about the direction that formal education in Ireland is moving in light of various changes in society. This prompts questions about children’s interaction with ICTs outside of school and also about what impact the Digital Age has on education. In order to engage with these questions further, it is necessary to conduct empirical research. In Chapter Three, the research questions and the methodologies used are presented. The rationale for the methods and strategies chosen are outlined, as are the practical and ethical considerations that informed the empirical work. While the shortest of all of the chapters, it is of crucial importance in establishing the parameters of the empirical phase of the work, in ensuring the validity of the study, and in setting up the analysis and discussion in the following chapters.

Chapters Four and Five present the findings, analysis and discussion. The final two chapters relate directly to Chapters One and Two with respect to the topics being discussed. Given the partnership approach that is characteristic of educational policy and change in Ireland, the empirical work involved discussing the themes of the literature review with a range of stakeholders. Chapter Four explores conceptions of the Digital Age with three stakeholders with different perspectives on what it means for society and education.

Chapter Four is also an exposition of children's views on their own engagement with ICT outside of school. As policies begin to acknowledge and seek to incorporate children's existing extra-curricular uses of ICTs, it is necessary to try to understand these better. Chapter Four provides a context from which to explore the findings and discussion in Chapter Five. In the final chapter, the views of three stakeholders working directly in primary school education are featured and discussed in relation to the themes of ICT policy examined in chapter Two. The final section of Chapter Five features the views of three experts in the area of literacy and media literacy. The overall aim of this work is to move towards a vision for implementing a theoretically informed praxis that could change learning in the Digital Age.

CHAPTER 1

1.1 Introduction

The aim of this work is to explore the assertion that “learning is changing” in the Digital Age. The first chapter focuses on the wider influences on learning and is in three parts. It begins by outlining the critical theory perspective of the work. The second part of the chapter is an exposition of three social theories of contemporary society. The Digital Age is a contested concept and, as such, the three social theories used in this work represent three viewpoints that are concerned with the creation and dissemination of information within society and how changes in this respect impact on society. The final section of Chapter One is about children’s media culture. It provides a discussion that is largely absent from the educational ICT discourse in Ireland, in that it focuses on children’s engagement with ICT outside of school. This exploration provides a picture of childhood in the Digital Age acknowledging both positive and negative perspectives, and research on children’s changing media environments.

1.2 The Theoretical Perspective

The concepts of education and the Digital Age could be explored in many different ways. It is necessary, therefore, at the outset to clearly outline the theoretical perspective taken in this work. Firstly, of central importance in discussing education and digital technologies is the acknowledgement that ICTs are not simply technologies, but *information* and *communication* technologies. Thus, in this work the focus is on considering how information and knowledge are created and communicated within society, and how the evolution of digital technology is implicated in these developments. Secondly, education and digital technologies overlap in that they are both essentially concerned with the

production and dissemination of knowledge through interaction with others (Selwyn, 2011b). In light of these factors, the theoretical perspective relates to knowledge and meaning within society. Drawing on the works of both cultural and critical theorists such as Raymond Williams, Antonio Gramsci and Stuart Hall, it aims to provide a foundation for understanding how knowledge is constructed in society and highlights the relations of power and domination that are implicit in this construction.

1.2.1 Representation & Culture

In its simplest form, representation is the process whereby we construct meaning (Hall, 1997). Making meaning and understanding the world are not about individual concepts but rather all the many different ways of organising, clustering, arranging and classifying concepts and establishing the complex relations between them. The construction of conceptual maps is the first system of representation (Hall, 1997). It depends on the relationship between things in the world and the mental representations that we have of them. As individuals, we are able to communicate with other people because we share broadly similar conceptual maps to each other and so make sense of the world or interpret it in similar ways.

Shared conceptual maps translate into language in order to “correlate our concepts and ideas with certain written words, spoken sounds or visual images” (Hall, 1997, p. 18) which can also be referred to as signs. These allow people to express meanings and communicate with each other. It is important to note that the use of the term language extends beyond the particulars of a spoken system or written system and includes also visual images, body language or the more symbolic languages such as fashion. Thus, language can be thought of as referring to any object which functions as a sign and is organised with other signs into a system which is capable of carrying and expressing meaning (Hall, 1997).

Culture

This idea of having shared meanings or shared conceptual maps is what is meant by the term ‘culture’ (duGay, 1997). The word culture comes from the verb “to cultivate,” but from the 1800’s onwards, the notion of high culture emerged - what Matthew Arnold described as “the best which has been thought and said in the world” (1869). In 1958, Raymond Williams wrote an essay called “Culture is Ordinary” where he accepted that culture refers to the arts and high culture but crucially he asserted that culture is also “the ordinary processes of human hearts and human minds” (p. 32). For Williams, while both of the uses of the word are relevant, what is important is to understand the relationship between the two conceptions of culture, understanding that culture is *both* traditional and creative.

According to Hall and Jefferson (1976), culture can be understood as “that level at which social groups develop distinct patterns of life, and give *expressive form* to their social and material life-experience”(p 10). The culture of a group or class as represented by meanings, values, and ideas, is embodied by social institutions, in social relations, customs and in the value and uses of objects in material life. Culture is something we learn in society and is made intelligible through “maps of meanings” that are not simply carried around in one’s head but are objectified in the patterns of social organisation and relationship through which the individual becomes a “social individual”. It is the way the social relations of a group are “structured and shaped: but it is also the way those shapes are experienced” (Hall et al, 1976, p 10-11). Therefore, culture embodies the trajectory of group life through history always under conditions and with raw materials that are not completely of it’s own making.

The concept of meaning being constructed, and in a constant process of construction and reconstruction, is problematic because it implies that meaning is not always objectively definable. Essentially, meaning and representation belong to the interpretive side of human

and cultural sciences. Conceptual maps of meaning are complex and interrelated. Culture, that is the shared meanings of human hearts and minds, depends on larger units of analysis than words, such as narratives, statements and whole discourses. Through reference to the work of Michel Foucault on discourse, it is possible to move the discussion on from looking at meaning to looking at *knowledge* and the social practices and relations of power.

1.2.2 Discourse

The term discourse generally refers to a linguistic concept - meaning passages of connected writing or speech. However, its meaning was extended by the work of Foucault (1984) whose aim was to understand relations of power within cultural and historical specificity. His understanding of discourse was - a group of statements which provide a language for talking about a particular topic at a particular historical moment. Because all social practices entail *meaning*, and meanings shape and influence what we do, all practices can be said to have a discursive aspect (1984). Discourse effectively combines what is said with what is done. According to Hall (1997), it also influences how ideas are put into practice and used to regulate the conduct of others. For Foucault, discourse is historically specific in that meaning does not transcend different time periods but it does cut across many areas of society and this he calls “discursive formation”. It is within the discursive formation that things have meaning.

Foucault argued that knowledge is always a form of power, and power is implicated in the questions of whether, and in what circumstances, knowledge is to be applied or not. This means that the application and effectiveness of power and knowledge is more important than any absolute truth. When one has power and possesses knowledge, he or she assumes the authority of having the truth, and in acting upon it, has the power to make that true. Thus, for Foucault we should admit that:

power produces knowledge...that power and knowledge directly imply one another; that there is no power relation without the correlative constitution of a field of knowledge, nor any knowledge that does not presuppose and constitute at the same time, power relations (Foucault in Rabinow, 1984, p. 175).

What we think we 'know' at any particular period about a concept has a bearing on how we regulate, control and deal with it. To further examine how power and knowledge operate within society, the work of Antonio Gramsci (1971) and Stuart Hall (1986, 1997) on hegemony, ideology and common sense are presented below.

1.2.3 Hegemony, Ideology and Common Sense

Gramsci (1971) used the term hegemony to explain positions of domination and subordination in society. It refers to an understanding that in society there is a dominant class and a number of subordinated classes. The way in which the ruling-class maintains control over the other classes is referred to as "hegemony". This means that their dominance is not secured through violence or coercion. Rather consent of the subordinate classes or groups must be won. Consent, however, is not a fixed point. It is a moment of power which is always contestable - that has to be constantly re-won - and it is in this contestation that there is space for, and a need for, resistance. Gramsci (1971) argued that capitalism need not always be the dominant force within Western society. Through the generation of "organic intellectuals" (1971, p 15) it is possible for a class to advance to a position of power and influence. Hegemony, therefore, is not the property of any one particular class formation, but a way of understanding the relations of domination and subordination *between* classes.

Hall develops Gramsci's idea of hegemony in order to understand how the mass media and culture can be manipulated in order to maintain control. He notes that Gramsci challenges us to rethink the ways in which we perceive the state as operating in an

“exclusive, coercive, dominating and conspiratorial manner” (Gramsci, 1971, p. 26).

Instead, Hall (1986) asserts, its dominant position is maintained through the guise of ideology, negotiation and education. Negotiated power refers to how members of a class are able to persuade other classes that they share the same interests. As Foucault asserted “power produces knowledge”. Crucially though, this ideology is not the same as false consciousness as espoused by Althusser (1971), for example, for in this instance the subordinated class willingly collude and negotiate with the dominant power block (Gramsci, 1971). In order to generate the feeling that the groups share similar interests, certain concessions must be made to the subordinated groups. Hall argues that the media systematically reinforce a dominant world-view of society and its dissenters, and *it is this dialectical relationship that enables those in power to maintain power while ostensibly giving people what they want.*

As mentioned above, the domain of meaning - constructed through the various webs of codes that generate our sense of the world - functions like a map within which we naturally link some things and exclude others (Hall, 1997). These maps of meaning are generated within a culture and contain both the residual elements of previous cultures and histories, as well as the emergent strains through which society comes to identify itself as modern and contemporary. The maps of meaning of the dominant class become the dominant ideology. Whereas ideology has more commonly been associated with hidden forces, Hall argues that it is crucial that we understand ideology as “what is most open, apparent, manifest” (1997, p 325). This is what distinguishes ideology from false consciousness; ideological propositions or explanations reveal themselves at the surface level but what is concealed is the foundation of these ideologies. This is why we may not be consciously aware of where our beliefs come from. The beliefs we hold, our points of reference, and the general social knowledge that make up a society’s world-view, are constructed within the “horizon” of language and culture. These networks of meanings

function as “domains of meaning” within which the whole class structure is reproduced.

We live and understand our world within the legitimated horizon of dominant ideology and it is within civilian life and the institutionalised spheres of the State that we ‘see’ the function of ideology. As Hall writes of ideology and domination:

This operates, not because the dominant classes can prescribe and proscribe, in detail, the mental content of the lives of subordinate classes...but because they strive and to a degree succeed in *framing* all competing definitions of reality *within their range*, bringing all alternatives within their horizon of thought. (1977: 333)
(emphasis in original).

Our reality is framed within the horizon of the dominant ideology and it is visible and apparent. *It is common sense*. Gramsci argued that the governed people internalise the ideas and ideologies of their leaders and come to understand them as shared concerns. However, common sense always bears the trace elements of residual parts of older and more developed systems of ideological thinking. It is not eternal but in reality, it is what passes for truth “in *our* particular age and society, overcast with the glow of traditionalism” (Hall, 1977, p 30). The very fact of common sense’s readily available and ubiquitous nature, coupled with the fact that it defies any kind of rationalisation or contradiction, renders it spontaneous, ideological *and unconscious*. In this way, its taken-for-grantedness is what establishes it as a medium in which its own premises and presuppositions are being rendered *invisible* by its apparent transparency.

For Gramsci, common sense is the “folklore of the future” (1971, p 326) and it is often employed as a means of naturalising the world and undermining the use of theory. It is fundamentally aligned with an inability to recognise the historicity of one’s position in relation to the world at a given time. He warns that we must understand that when we speak, we do so from a particular point in history, and if we don’t, then we misapprehend the possibility of other people’s perspectives. Where common sense tries always to speak

of the general and the universal, it is, in fact, a fragmented and incoherent wisdom. Gramsci suggests that only when we can develop our thinking to conceive of a bigger and more coherent world picture, can we truly start to develop a ‘praxis’ – or theoretically informed practice. He believed that it behoves every individual to become his own philosopher and in so doing, resist the incoherent, fragmentary and conformist views of the world imposed by an external environment. To begin to critically reflect is the starting point for developing a consciousness of what one really is, and this leads to “knowing thyself” as a “product of the historical processes to date which has deposited in you an infinity of traces without leaving an inventory” (Gramsci, 1971, p 324).

1.2.4 No Longer a Matter for Debate

Accepting this conceptualisation of knowledge, ideology and common sense illuminates the presentation of ICT in education in the quotations given in the Introduction. That educational technology is presented as an unequivocally positive opportunity for education in Ireland without any contradiction legitimates a discourse that promotes the use of technology in schools. It is taken for granted. In this sense, the use of ICT in education is naturalised and any effort to gain a theoretical understanding is undermined, as is the opportunity to form a theoretically informed praxis. ICT education policy in Ireland in recent decades has been based on an apparently common sense attitude that links education and ICT. However, based on the critical theory lens established above, this is difficult to accept as objectively true. If knowledge and meaning are constructed and within the frame of the dominant class in society, then it is necessary to ascertain why ICT and education are being presented in this way. Thus, the aim of this work, inspired by the work of Gramsci, is to develop the thinking in relation to ICT in Education, to expose the fragmented and incoherent wisdom, and to begin to think critically about the Digital Age and education in an effort to develop a theoretically informed practice.

1.3 What is the Digital Age?

The term “Digital Age,” as it is used in this work, is concerned with how developments in digital technology influence and are influenced by culture, politics, economics and society. The term is used in a descriptive and general way to reflect the infusion of everyday life with digital technologies. It is not used in opposition to the terms information society or knowledge society, rather they are implicit in one another. Digital technologies have had a significant impact on information and communication but how these changes are manifested in contemporary culture can be understood in many different ways. Taking this into account, and acknowledging the critical perspective of this work, three theories that relate to changes in contemporary culture are explored. They are connected in that they are all social theories that consider changes in relation to information. Daniel Bell’s “Post-Industrial Society” is concerned with changes in occupation, Herbert Schiller’s account of the political economy of mass communications is concerned with the marketisation of information, while Jurgen Habermas’ discussion of the “Public Sphere” is concerned with the circulation of information in the public domain.

Before exploring these theories, it is necessary to begin by outlining how ICT is understood in this work. While the DES report presented ICT as a pivotal force in changing learning, the critical perspective of this work asserts that ICTs are not merely ideologically inert technologies. Thus, the discussion of the Digital Age begins by jettisoning the notion that technology *causes* social change - also known as technological determinism.

1.3.1 Technological Determinism

In *The Third Wave* (1980), Toffler claimed that the world has been decisively shaped by three waves of technological innovation. The first was the “agricultural revolution”, the second was the ‘industrial revolution’ and the third wave is the “information revolution” that is currently washing over society and leading to a new social order. The problem with

his theory is the idea that the ‘information revolution’ is something that happens to us, like an unstoppable wave that overpowers society. In this instance, evolution is presented as both inevitable and determined solely by technology. This perspective on change is known as technological determinism and implies that technology determines how society changes - relegating social, political and economic dimensions of influence to a subordinate position where they follow from technology. However, that technology holds such power over the development of societies is dubious. As Webster (2006) writes “[T]echnology in this imagination comes from *outside* society as an invasive element, without contact with the social in its development, yet it has enormous social consequences when it *impacts* on society” (p. 12) (*italics in original*).

It has been shown on a number of occasions that technology is not aloof from society and is, in fact, heavily influenced in its development by social values. One well-known and oft-cited case of this is Robert Moses’ bridges. A master builder of roads, parks and bridges in New York from the 1920’s to the 1970’s, Moses designed a number of bridges that were so low that buses could not pass under them. As a consequence of this, poorer people, who relied on public buses for transport, could not travel to the public parks that were situated near the low clearance bridges. According to Henman (1997), Moses’ bridges formed an “essential element in a socio-technical system which embodied a politics of class and racial exclusion” (p. 325). With respect to education, the technological determinist stance is evident in arguments that ICTs *improve* learning.

Although technological determinism may be rejected out of hand by social scientists and educationalists, Selwyn (2011a) warns that there can sometimes be a subtle element of “soft” determinism in writing in this area. This refers to perspectives that, instead of claiming that technology improves learning, see technology as *helping* to improve learning. Technology is viewed as impacting on social situations in ways that are malleable and controllable. However, as Selwyn points out, the conclusions and recommendations that

these perspectives inevitably arrive at are focused on overcoming the barriers and constraining possible negative effects so that the benefits of technology can be felt. In essence, technology is still viewed as being capable of change, and it is the role of educators and policy-makers to channel the changes in suitable directions. Therefore, although writers may have consciously side-stepped a pure technological determinist stance, the danger of this perspective is that it underplays any critique of the social, economic and political aspects of technology in education.

On the other hand, it is not claimed in this work that technology is entirely shaped by existing social relations - where technology is seen as having no inherent qualities that shape how it is used. Raymond Williams (1975) advocates a dialectical approach whereby technology is both shaped by society and also plays a role in shaping it. As Buckingham (2007) writes:

Technologies – or machines – are obviously part of the story. But technologies should not be seen as simply a set of neutral devices. On the contrary, they are shaped in particular ways by the social interests and motivations of the people who produce and use them (p. viii).

What is most intriguing about Williams' writing in this area is that the arguments that he put forward in relation to television, over thirty years ago, share a certain undertone that is visible now in discussions relating to ICT. The opening to his book, *Television* (1975), is still both insightful and relevant:

It is often said that television has altered our world. In the same way, people often speak of a new world, a new society, a new phase of history, being created – 'brought about' – by this or that new technology: the steam engine, the automobile, the atomic bomb. Most of us know what is generally implied when such things are said. But this may be the central difficulty...in our most ordinary discussions, that we fail to realize their specific meanings. For behind all such statements, lie some of

the most unresolved historical and philosophical questions. (p. 9)

As Williams goes on to write, statements of this kind do not pose the difficult questions, rather they mask them and, in doing so, they undermine the assertion that the unresolved questions need to be discussed and debated. These are the common sense and ideology that Hall and Gramsci wrote about and this illustrates the reasoning behind the theoretical perspective of this work; that we need to more fully understand or at least unmask some of the unresolved historical and philosophical questions behind the place of ICTs in society and education.

In eschewing the technological determinist stance in favour of an acknowledgement that technologies both shape, and are shaped, by the societies they are a part of, it is necessary to offer an understanding of ICTs that takes account of these social milieu. In this work, it is asserted that ICTs be conceived of, not simply as technologies, but as *media*.

1.3.2 ICTs are Media

The expansion of the term IT (information technology) to ICT (information and communications technology) reflects the evolution of technology and represents the consideration of communication when discussing these technologies. This is a significant point to explore, because when discussing children's use of ICTs in relation to both formal and informal learning, how they are understood will have an impact on how they are used. Asserting that ICTs should be conceived of as forms of media is a significant element of this work. It challenges an approach to educational technology that views it as merely a tool to deliver information. Instead, questions relating to the quality of information and the nature of how this is communicated to, and by, children come to the fore. ICTs are technologies that *mediate* information and communication. As Buckingham writes:

A medium is something we use when we want to communicate with people *indirectly*, rather than in person or by face-to-face contact.... The media do not offer a transparent

window on the world. They provide channels through which representations and images of the world can be communicated *indirectly*. The media *intervene*: they provide us with selective versions of the world, rather than direct access to it (2003, p. 3).

Given this description it is not possible to think of ICTs as tools that simply deliver information or enhance education.

Media – Technologies and Protocols

Media historian Lisa Gitelman (2008) provides further insight into our understanding of media technologies by suggesting that media work on two levels. On one level, a medium is a technology that enables communication. It is a delivery system for content. As technology develops and “new” media are created, old delivery systems are either replaced or used in different ways. At the second level, Gitelman uses the concept of “protocols” to describe the social, cultural and economic aspects that are associated with a medium. The protocols associated with cinema, for example, “includes everything from the sprocket holes that run along the sides of film to the widely shared sense of being able to wait and see ‘films’ at home on video” and, most importantly, she adds, “protocols are far from being static” (2008, p. 8). While the delivery system may be replaced completely, it may also acquire a new social or cultural purpose or meaning. This was the case with vinyl records, once a predominant mode of purchasing music, sales declined with the introduction of CD’s and digital downloading. However, recent years have witnessed a surge in the sales of 7-inch vinyl singles, the main purchasers of which are teenagers (Hastings, 2006).

In essence, what Gitelman establishes with the concept of protocols is not the separation of technologies from their role as forms of media, but the intricate relationship between technology and how it is used as a medium. In the context of this work, it is this complex relationship between technologies in their capacity as media that is of most

significance. What Gitelman's insightful history of media, culture and data also highlights is how media become "invisible" or "transparent". This happens when we forget about the norms and standards that we are heeding in using particular technologies, when we forget about the protocols of speaking on the phone to someone, even though the technology plays a role in mediating and structuring our communication with the other person. Gitelman therefore locates media technologies at the "intersection of authority and amnesia" claiming that "media become authoritative as the social processes of their definition and dissemination are separated out or forgotten, and as the social processes of protocol formation and acceptance are ignored" (2008, p. 6).

While ICTs cannot simply be considered tools that transmit information that is not to say that the technology itself is not significant. It makes no sense to think of the content of communication without also considering the media that communicates that content, represents it and sets the limits of what the content can consist of. This is of particular relevance with respect to the ubiquitous and seemingly infinite amount of "information" that is now allegedly accessible to everyone. As Gitelman writes "[h]owever commonplace it is to think of information as separable from, clearly contained in, or uninformed by media, such thinking merely redoubles the structural amnesia that already pertains" (2008, p. 7). To understand ICTs as ideologically inert technologies that deliver information therefore is a significant oversight and again highlights the need to be both conscious and critical. Given the theoretical perspective of this work that highlights the power and ideology implicit in the construction of knowledge, there are many parallels with this account of media. The message in both cases is the need for citizens to be conscious and critical.

Convergence Culture

The second element relating to the pace of evolution of digital technologies is the concept of convergence. This refers to how technologies are converging so that content is

no longer necessarily media-specific. For example, one can read the newspaper on the Internet, or watch a DVD on a games console. A more in-depth understanding of what this means for society is presented by MIT Professor, Henry Jenkins (2008). In discussing convergence *culture* as opposed simply to the convergence of technologies, Jenkins' consideration of this topic represents a sophisticated social perspective on convergence. He focuses on a cultural shift in how media content is consumed as technology evolves. Jenkins asserts that there is both convergence and divergence of technologies but that these are two sides of the same process. Where convergence was once thought of as all technologies converging into one ultimate "black box," there is an acknowledgement that as the hardware diverges the content converges. For example, email needs and expectations are different whether one is at home, work, school, or in transit. Thus, different devices are designed to suit different needs for accessing content depending on where a person is and what they need.

Convergence culture represents both a change in how media content is produced and how it is consumed and alters the relationship between technologies, markets, and audiences. On one hand, production technologies are cheaper than ever and allow more people to create and circulate their own content, manipulate and re-publish other people's (and companies') content. This could represent a new level of grassroots production and be viewed optimistically as a step towards a more democratic media culture. For example, the Internet, with sites such as You Tube, has become a key site for the production and consumption of media content. Also, in the 2008 United States presidential campaign, Barack Obama raised funds through the use of social networking sites. It was suggested that, in light of the fact that Obama had opted out of the public funding system for his campaign, this was a more democratic form of fund-raising (Luo, 2008). However, Jenkins cautions against assuming that convergence automatically leads to democracy. The corporate media environment is increasingly being dominated by a small number of media

conglomerates (Schiller, 1996). For these companies, grassroots productions can serve to perpetuate their products and profits or at other times, they can undermine them, as is the case with file-sharing and illegal downloading. Sometimes corporate and grassroots convergence reinforce each other and at other times they are at war, but for Jenkins the key point is that it is these struggles that are defining the face of popular culture.

Having jettisoned the technological determinist stance on ICT and offering instead a more contextualised understanding of ICT within society as media, it is timely to consider how changes in the ICT and media environment can impact at the level of society. In line with the theoretical perspective of this work, three theories that focus on the social aspect of change are presented and used to build an understanding of the Digital Age. They are explored and critiqued in an effort to unmask some of the unresolved historical and philosophical questions and also to facilitate a context within which to view the following sections on children, ICT education policy and also literacy in a Digital Age.

1.3.3 Social Theories of the Digital Age

The Post-Industrial Society

Daniel Bell's *The Coming of the Post-Industrial Society* (1973) offers the concept of the Post-Industrial Society as an analytical construct to understand society. Bell claims that we are entering a new system - a Post-Industrial Society - that is characterised by the heightened presence and significance of information. He sees information and knowledge as being crucial both quantitatively and qualitatively - in that there is more information and also the quality and nature of information being used has changed. Bell's emphasis on information and knowledge is an example of what might be understood as a "knowledge-based society". One of the most common references to the changes in society within policy in this area and press releases from Government ministers is that we are experiencing changes akin to those of the industrial revolution or as Minister for Education, Rory Quinn,

stated: “We are at the cusp of a transfer of knowledge on a scale and on a level which in my view happened the last time 500 years ago with the Gutenberg printing press” (*The Irish Times*, 6th April, 2011). For this reason, it is worthwhile to explore Bell’s theory in more detail.

The Post-Industrial Society is most concerned with occupational changes that have been advanced by the “more for less” principle. That is, in pre-industrial societies, everyone had to work the land to survive, but with the development of machinery in the industrial revolution, productivity could be increased while fewer workers were needed. Thus, more output could be created with less input in the form of investment and physical labour. The result was industrial wealth, which allowed people to pay for services and thus, occupations aimed at satisfying these new needs developed, ultimately creating a society where more people work in service sector jobs.

For Bell, this displacement of jobs represents a displacement also of the materials that people are working with. In the pre-industrial society, life was “a game against nature” (Bell, 1973, p. 126); in the industrial society it was a game against fabricated nature and now in the post-industrial service society, it is a “game between persons” where the raw material is not “muscle power, or energy, but information” (p. 127). Bell’s emphasis on information signals the rise of the professionals, which he presents as offering both greater job satisfaction and opportunities, and also given the primacy of professionals such as scientists and engineers, this ultimately leads to the expansion of a new intelligentsia. These professionals are “knowledge experts,” who are particularly disposed to planning, leading to a more organised society. This, according to Bell makes society more intentional and self-conscious and allows it to take control of its destiny. Bell also contends that since the Post-Industrial Society is a “game between persons”, relationships between people are at the core and this leads to a more caring society - promoting the “community rather than the individual”(1973, p. 128).

Central to Bell's conception of the Post-Industrial Society is how information has changed social life in a qualitative sense and this is most visible in his assertion of the importance of "theoretical knowledge" and its significance in the area of innovation. Where once "talented amateurs" encountered a practical problem and through trial-and-error reached a solution, in the Post-Industrial Society the starting point is theoretical knowledge. Furthermore, using theoretical knowledge in this way creates further theoretical knowledge, thus making it self-perpetuating. This allows the new intelligentsia to manage, organise and plan better, which Bell suggests is a core element of this new industrial era.

Although Bell's Post-Industrial Society theory in many ways represents what appear to be some of the changes in contemporary society, it also suffers a number of flaws. It is difficult for this concept not to appear to be neo-evolutionary. Bell is essentially suggesting that the United States of America is leading the world on a path towards a new type of social system. His conception of social change is that it is driven by the "more for less" principle and he attributes this increase in productivity to advances in technology. On one level this is an iteration of technological determinism and at another it is a form of rationalisation. As Webster (2006) argues, the fact that Bell's central themes are so dependent on the theories of the nineteenth- and early-twentieth-century social scientists undermines his case that this is a *new* era. If the bottom line is still "more for less" in line with Weber's principle of rationalisation, have we really moved beyond the industrial society? That the Post-Industrial Society is primarily a result of changes in occupations is also untenable in places. The reality of contemporary society is that the economy is an integrated one, with services and industry being linked. Moreover, information is fundamental to almost all productive activity not just the service sector and white-collar jobs (Melody, 1991). The Post-Industrial Society is worth considering in this work as it focuses on changes in society primarily in the realm of occupations and the themes of

employment and the educating the work-force for the information society are at the heart of much ICT policy.

In attributing the shift from one mode of society to another, Bell is proposing that as a result of developments in information systems and technology, we now inhabit a new sort of society. Although aspects of his theory can be criticised, the prominence that Bells attributes to information in the realm of occupations, and his contention that theoretical knowledge is now a fundamental feature of innovation, signals a kind of information society.

The Political Economy of Mass Communications

The work of Herbert Schiller (1986, 1996) adopts a political economy approach to communications and information issues by paying attention to the structural features that lie behind media messages. He subjects ICT to *systemic* analysis in the context of the entire socio-economic system and acknowledges the historicity of information in relation to trends in different epochs of capitalism. His work connects with Hall's exploration of the role of the media in framing experience. In contrast to Bell's Post-Industrial Society, this approach is a holistic one where information is understood in relation to the economic and political spheres. It is focused on trying to understand an era of unprecedented technological and informational developments within the context of the market. Within this context, Schiller has a number of concerns; the commodification of information, how market pressures impact on the buying and selling of information, the exacerbation of class inequalities in a market system of information, and the perpetuation of corporate capitalism through mass communications.

From Schiller's perspective, the information domain in contemporary society has been developed by corporate interests to further their own goals. He sees information as being fundamental in the creation of transnational empires because the way information is used in

contemporary society perpetuates the market forces that created it and this sustains capitalism - both in the material sense and the ideological sense (1996). For example, Schiller argues that within the United States, the mass media coverage of news events in relation to other countries serves to perpetuate ideological support by representing other countries as poor, weak, or fundamentalist. He sees this as a form of cultural imperialism that promotes the transnational empire of wealthier Western countries.

Schiller's Marxist perspective on the information age is critical of any notion that technology is simply invented and then used by people. He highlights the role of the market in the development of technology and argues that it is prudent to ask: "What criteria served to develop this technology?", "Who funds its research and development?" and "Who gains from these technological advances and developments?" It is with the explorations of questions like these, that he claims that technologies are developed for, and are funded by, transnational corporations to run their businesses more efficiently, to allow them to outsource manufacturing to countries where it costs less, and to facilitate bases in different countries in order to enter and compete in new markets. The imperative of the market, in his view, is the dominant force in the development and innovation of information and communications technologies.

One arena where this impacts significantly on social life is in the way that transnational corporations lobby governments. The privatisation of formerly State-owned and -regulated public organizations has had a marked impact on the information domain. Vincent Mosco (1989) claims that this "represents an abdication of policy in favour of the marketplace" (p. 201) and it is cause for concern that public subsidy is replaced by private corporate interests. This is particularly evident in concerns about "intellectual property". The primacy of the market in the information domain, and the commodification of information, means that information is increasingly available to those who have the ability to pay for it. For Schiller, this means that the hierarchical divisions of society are ever more

influential in an information society. Indeed, statistics and research support Schiller's argument showing that the more economically well off in society have greater access to broadband and are better able to make use of the information that they are accessing. Mosco (1989) described this as a "pay-per society" where the ability to pay is the deciding factor in one's involvement in the information society. This is often referred to as the "digital divide". Schiller's Marxist perspective allows us to conceive of the information society as being developed within a class society and thus it is not only influenced by these inequalities but may also exacerbate them.

The current information environment is expressive of capitalist concerns in that the corporations that dominate the information industry operate on market principles where production is geared towards profit. This commodification of information raises serious and fundamental questions about the quality and quantity of information available. It also is of concern in an era where information is considered to be of central importance. For Schiller, more information is not necessarily a positive outcome for society. He contends that while the corporate sector have benefitted greatly from the ICT boom, in the public sector of people's everyday lives, the developments have been largely in the realm of entertainment, which he refers to as 'garbage information'. As Webster writes, "it is striking that, for the 'general public', the 'information revolution' means more television" (2006, p. 147). However, more television doesn't necessarily mean more diversity. Individual households relatively speaking do not generate significant profit. Rather, given that advertising and sponsors have to heavily subsidise television, a desire to appeal to the mass audience undermines any real sense that television can appeal to a varied and diverse audience. For Schiller, this is further evidence that the general public is the "information poor" and this scenario also plays out at an international level where the media tastes of one country dominate others.

Schiller's account of the political economy of the information realm and his assertion of what was referred to as the abdication of public policy for private companies, leads to the question of the impact of these developments with respect to information and the public sector of society. He was concerned about the progressive impoverishment of social and public space and the place of information in the public sector of society is now explored through Habermas' theory of the bourgeois public sphere.

The Public Sphere

For Habermas (1968), the bourgeois public sphere emerged as the result of key features of the expanding capitalist society in Britain in the eighteenth century. As capitalist entrepreneurs flourished and gained more wealth, they wanted to be independent of the influence of the Church and State. One way they gained this independence was through support of theatre, art, and novels, which reduced dependence on patrons and also established a sphere that was creatively free and open to critique. In line with this was the development of newspapers that were established independently of the State and promoted free speech and critique of events within society. For Habermas, these developments contributed to the creation of a bourgeois public sphere that allowed for open debate, public scrutiny, increased accessibility and independence from State control and economic interests. The fight for independence from the State was an essential feature in the development of the bourgeois public sphere and was characterised by the struggles of the early capitalists for free press, political reform and for greater representation. The public sphere, therefore, was a place between the State and private interests where wider society could learn about what was happening in a non-partisan way. However, over time, the role of the public sphere became diminished. According to Habermas, the struggles to create a free and open space led to a situation of privatisation and 'refeudalisation'. The public sphere was infiltrated by private entities and over time the balance of power tipped in favour

of the private interests of the capitalists, who were able to use this power to further their own goals. It became an arena where competing interests could display their powers rather than being a sphere of contestation between different policies and outlooks.

For Habermas, the centrality of public relations and lobby groups in contemporary society is a key example of how the role of the public sphere diminished from a reliable information provider to a public opinion former. Of central importance in maintaining the public sphere are the mass media and as Herman and McChesney (1997) write, they “are especially important in large and technologically advanced countries where most of the citizenry never meet 99 per cent of their fellow citizens and the media serve as a kind of priory” (p. 2). The media provide information, or myths and disinformation, about the world and help create a common culture and system of values, traditions and ways of looking at things. At the political level, they play a central role in the working of democracies because democracy depends on this public sphere for its populace to be informed and make political choices. According to Herman and McChesney (1997), the media are the pre-eminent vehicles of communication through which the public participates in the political process, and the quality of their contribution to the public sphere is an important determinant of the quality of democracy—“If their performance is poor people will be ignorant, isolated and depoliticized, demagoguery will thrive and a small elite will easily capture and maintain control over decision making on society’s most important political matters” (pp. 3-4).

Theodore Adorno, a critical theorist and former teacher of Habermas, wrote about the “culture industry” (1991). His foundational point was that the mass media are, in essence, businesses. These transnational media corporations are subject to the logic of the market with the primary aim being to generate profit. As a result, the information that sells best is the information that will be published. If the goal is to secure maximum advertising revenue, for Habermas following Adorno’s perspective, what the mass media do is subject

their audiences “to the soft compulsion of constant consumption training (1962, p. 192).

Schiller (1996) was also concerned with this aspect of the media industry. He understood the information revolution as allowing oligopolistic corporate businesses to extend further into the everyday lives of people promoting consumer capitalism and ultimately a more privatised and individualistic way of life.

Naomi Klein (2000) writes of how the public space has been colonised by marketers and private corporations and how this in turn affects public speech. Private branded enclaves in the forms of malls and superstores are replacing or have replaced town squares which means troubling prospects for civil liberties – “unlike the old town squares, which were and still are sites for community discussion, protests and political rallies, the only type of speech that is welcome here is marketing and other consumer patter” (p. 183). Zygmunt Bauman (1997) highlights the inherent contradiction in the creation of the public sphere and the protection of individual liberty. He writes that critical theory was concerned with the dangers of the public invading the private, subjective individual and less thought was given to the dangers residing in the narrowing or emptying of the public space and the possibility of “reversed invasion: the colonization of the public sphere by the private” (p. 51). For Bauman, any struggle for emancipation in the current age needs to resuscitate what for most of its history it tried to destroy and push away. “Any true liberation calls for more, not less, of the ‘public sphere’ and ‘public power’. It is now the public sphere which badly needs defence against the invading private – though, paradoxically, in order to enhance, not cut down, individual liberty” (1997, p. 51.)

The concept of the public sphere as a way of discussing information dissemination in the public domain is particularly relevant as it illuminates the role that mass media play in shaping public opinion or in the information society. For the purposes of this work, this concept is of central importance in understanding discourse and policy. It raises scepticism towards the quality of information that is circulating in the public domain. Information is

not a neutral factual entity that improved technology allows the populace to access. What both Schiller's theory of the political economy and Habermas' theory of the bourgeois public sphere highlight is the role of the mass media in the operation of information within society.

1.3.4 The Digital Generation?

The Digital Age is used in this work as a stimulus to discuss changes in society in the twenty-first century. While there is little consensus on this topic, there is a general acceptance of the prominence of ICTs in contemporary society. In using a social theory perspective the emphasis in this discussion is not on the advancements within ICT, rather it is on the practices and activities that surround them. The three examples as put forward by Bell, Schiller and Habermas represent different views on the construction of knowledge within society and dispel the notion that within society ICTs can be understood as unequivocally positive. Where Gitelman's work highlights the importance of understanding ICTs as media that mediate content, representing it in certain ways and structuring how people interact through it, Jenkins' account acknowledges the accompanying convergence culture that impacts on how information is produced and consumed. Thus, it is concluded that ICTs do play a significant role in how societies are developing and changing.

Having explored in some detail some of the changes in the society that education is a part of, it is necessary at this point to consider the children who are growing up in this Digital Age. Before focusing on education and if or how learning may be changing, it is argued that we need to better understand children's interactions with ICT outside of school. For the purposes of this work, ICTs are understood primarily as media and it is argued that this understanding generates very different questions for educationalists about how to educate the 'digital generation'. Buckingham writes that "ultimately, we need to acknowledge that computers and other digital media are technologies of *representation*:

they are social and cultural technologies that cannot be considered merely as neutral tools for learning” (Buckingham, 2007, p. viii). Chapter Two will explore in greater detail the promotion of ICT in the formal learning environment but firstly, children are not simply students in our schools; they are social beings who live *and learn* in the world outside of school. Also, where ICT education policies document the failure of ICT to become embedded in formal learning, the same cannot be said for children’s leisure pursuits. Thus, it is necessary before considering the use of ICT in education to gain a better understanding of children’s media culture.

1.4 Children’s Media Culture

This section explores writing and previous research relating to children and the media. In order to understand how children and young people interact with technology, it is necessary to move beyond simply looking at what they watch or play with. Understanding their interaction with ICT involves acknowledging their changing media environments, as well as the wider social context of childhood in Ireland and the ways in which family relations and relations between children and adults are evolving. The aim of this section is to understand the complexity of children’s experience of growing up in a time of unprecedented digital and informational richness.

1.4.1 Childhood

What emerges when one begins to explore childhood is that due to the dependent nature of being a child, many parties are invested in protecting and providing for children. Parents are the ultimate authority on the care of their children, but the duty of care extends further out to the child’s own legal rights and the duty of the Government to protect children. From an international perspective, there are conventions such as the UN Convention on the Rights of the Child (1990) and the UN Declaration of Human Rights

(1948). Caring for children and ensuring that they have a good quality of life is not a straightforward task, however, as there are many parties with different interests involved. For example, in the case of the European Convention on Human Rights (1950), the right of the child to education became a stumbling block as some argued that the parent had the civil right to choose how their child was to be educated, while others argued that the child has a social right to be educated (Wahlstrom, 2009).

In recent years, there has been a move toward giving children a “voice”. In Ireland, the Ombudsman for Children was established under the Ombudsman for Children Act, 2002 in order “to make sure that the Government and other people who make decisions about young people really think about what is best for young people” (www.oco.ie). The phrase what is “best for young people” is ambiguous and contentious. It is a cultural construction. In the first half of the last century material conditions were taken as good indicators of well-being and progress (Casas, 1998). However, in contemporary Western society there is more focus on how people experience their own lives as opposed to simply looking at material conditions. Many professionals such as pediatricians, developmental psychologists, and educationalists, are seeking to understand what is good for child development.

“The claim that childhood has been lost, has been one of the most popular laments of the closing years of the Twentieth Century” as traditional certainties about the meaning and status of childhood have been steadily eroded and undermined (Buckingham, 2000, p. 3). Discussions about childhood typically descend into a form of binary determinism. Some authors are concerned that children are growing up too fast (Elkind, 1981) in the world of sex and drugs (Winn, 1984) and herald *The Disappearance of Childhood* (Postman, 1983), or the corporate construction of childhood (Kincheloe and Steinberg, 1997). The media are frequently blamed for provoking indiscipline and aggressive behaviour, for inflaming precocious sexuality, and for destroying healthy social bonds (Sanders, 1995; Meyrowitz, 1995). On the other hand there are a number of authors who focus specifically on the

perceived positive implications of new media technologies for children and young people (Tapscott, 1998; Papert, 1996). For Tapscott, where the television was passive, new technologies are active, meaning that where television “dumbs down” its users, the net raises their intelligence. What these polemical books show is that there are strong opinions on the relationships of children and childhood to technology and media. However, the arguments presented in the books are one-dimensional; with each one taking a particular stance on what is a particularly complex interaction.

Childhood, Adulthood and Media

The “child” is not a natural or universal category that is simply determined by biology (Buckingham, 2000). Children have been regarded – and have regarded themselves – in very different ways in different historical periods, in different cultures and in different social groups. The meaning of childhood is subject to a constant process of struggle and negotiation, both in the public domain and in interpersonal relationships among peers and the family. It is also worth remembering that disagreements between children’s perspectives about their own lives, and adult perspectives about children’s lives are an important dimension of social life and growing up (Casas, 1998). One area where these perspectives exist and compete is that of the family and one common site of contestation is that of media use.

One “distinctive feature of children’s lives is that they have relatively little control over the parameters of their ‘life world’” (Livingstone et al, 2001, p 6). Much media use is conducted in the home space where parents, are in control of what is bought, engaged with, when it is engaged with and, in what ways. To what extent parents exert their control depends largely on their perception of what is best for their children. Parents are also living within contemporary culture, in a time when what it means to be a parent or adult is changing. Within the area of marketing, there is now discussion of “age compression” and

the emergence of “kidults”, where children want to be older and adults want to prolong their youth, and thus adolescence is stretched at both ends and reaches through to later life (Mayo and Nairn, 2008). However, as Buckingham writes the

walls that surround the garden of childhood have become much easier to climb. And yet children - particularly younger children - are increasingly participating in cultural and social worlds that are inaccessible, even comprehensible, to their parents (2002, p. 32).

If this is the case, then are there implications for the power relations between today’s children and the adults in their lives? Kenway and Bullen (2001) assert that the knowledge politics of children’s consumer culture often explicitly oppose those of traditional adult-child relationships and formal schooling. Teachers are presented as dull and earnest - worthy not of emulation but of rebellion and rejection. These changes have ambivalent consequences for our views of childhood: on one hand, the boundaries between children and adults appear to be blurring, while on the other, they are apparently being reinforced. Children are being empowered and yet simultaneously denied the opportunity to exercise control.

The literature also suggests that in Western societies we have seen a gradual shift away from extended families to nuclear families and non-traditional family structures of various kinds - most notably single-parent families (Buckingham, 2002). There are also more women engaged in paid employment - which can have an impact on childhood. The Irish Census of 2006 confirms that these trends in the changing structure of families are evident in Ireland also. In the UK, research suggests that children are much more likely to be confined to their homes and are much less independently mobile than they were twenty years ago. Also, while parents now spend less time with their children, they are attempting to compensate for this by devoting increasing economic resources to child-rearing (Buckingham, 2002, Mayo and Nairn, 2008).

Growing Up in Ireland

In Ireland, the *Growing Up in Ireland* longitudinal study was commissioned in 2008 to track from infancy through to adolescence the lives of two representative cohorts of children - infants and nine-year-olds. The first wave of fieldwork, completed in May 2008, and involving research with approximately 8,500 nine-year-old children, provides valuable information on children and their families in contemporary Ireland.

When asked what most made them happy, the most common answer was family closely followed by friends. Both parents and children were asked about activities undertaken as a family as this is “central to understanding the nature of relationships in the home” (p 3). The most frequently mentioned activity undertaken by the nine-year-olds with their parents was watching television together (89%). Spending time with friends was their number one pastime. Sport was ranked as the favourite hobby with three quarters of children being involved with organised sports clubs. Nearly half (45%) of 9-year-olds had a TV in their bedroom with a similar proportion (45%) having a mobile phone. Most children (86%) have a computer in the home and ninety one per cent report using it. The activities they reported using it for include playing games (86%) surfing the Internet for fun (49%), surfing the Internet for school (47%), watching movies (29%), and doing homework (25%).

What *Growing Up in Ireland* highlights, is that discussion about children and ICT is not effective when constructed along the lines of a dichotomy between what is “best for children” and families and learning on one side and all interaction with media and entertainment technologies on the other. Although this report shows a significant level of usage of television and digital media, it also highlights that children report enjoying spending time with their family and friends and that many children are involved in sports and various hobbies.

1.4.2 Children and ICT – risks or opportunities?

Within the current discourses relating to the Digital Age, children are often constructed in two oppositional ways “both at the vanguard of the digital revolution ‘effortlessly grasping the tools’ of the new technologies, and at the rear, requiring educational policy interventions to ensure their acquisition of ‘key skills’ in ICT” (Facer et al, 2001, p. 91). The construction of the “cyber kid” refers to how young people are viewed within popular discourse as having a natural mastery of technology. Facer and Furlong (2001) argue that these constructions of the cyber kid derive both from future visions of technology-human relations and from discursive constructions of the role of children in society, thus “generating a ‘shorthand’ for the relationship between children and technology” (p. 452). This apparently natural relationship between children and technology is also a key selling point for digital technologies for as Pasquier asserts “[T]here is a wealth of evidence that, after the stage of early adoption by media ‘pioneers,’ their economic future depends on successful integration into domestic routines” (2001, p. 161). It is therefore necessary to present the relationship between children and technology as positive in terms of their future employment and accumulation of cultural capital. It is advantageous for this to appear to be ‘common sense.’

In contrast to the cyber kid discourse runs a parallel construction that sees children’s engagement with technology as bringing them into the adult world and “threatening the still powerful construction of childhood as a space of innocence and imagination” (Facer and Furlong, 2001, p. 452). However, considering the risks or potential negative effects of children’s media culture is not a straightforward task. In a recent report on children’s use of Social Networking Sites², Livingstone and Brake (2010) report that is an interdependency

² Social networking refers to sites, like Facebook, that connect communities of people in order to enable the flow of information among users. Using Web 2.0 technology, users create profiles and interact with and “friend” other users.

between the opportunities and risks. They found that teenagers' experience of a range of opportunities is positively correlated to their online risk. This means that the more skilled users experience both more opportunities *and* more risks and it also implies that the more policy attempts to limit risks, the more it may also limit opportunities.

To what extent this applies to Irish children can be gauged by looking at the recent *EU Kids Online Report for Ireland* (2011). This report provides a good indication of Irish children's skills and capabilities and how they compare to their counterparts across Europe. Children in Ireland in many respects are leaders in Internet use as compared to their European counterparts. Their use of the Internet is well above average (87% vs. 62%) and their access through mobile devices such as laptops, smart phones and other handheld devices are higher than average (20% vs. 9%). While Irish children are not the heaviest users of the Internet in Europe they are among the highest at declaring concern in relation to excessive use, and also a large majority of children (67%) believe there are things that will bother their age group on the Internet. Despite relatively high usage of the Internet, the research shows that in relation to the general skills needed to go online, Irish children say that they have four of the eight skills which is significantly lower than the European average of 5.7 of eight.

Both risk and harm are discussed in detail in the report with the point being made that risk does not necessarily lead to harm. In the context of Europe, while Irish children have reasonably high Internet usage they are less adventurous on the Internet and consequently safer. The finding is also supported by the high level of mediation by parents and teachers with respect to mediating Irish children's online activity.

These two discourses about children's use of ICT while apparently oppositional both imply that ICT skills are integral to children's lives; either they have a great aptitude and this should be developed further or they need more help. This places parents under increasing pressure to 'invest' in their children's education by providing additional

resources at home. A quick trip around a toy store will reveal that many toys claim to be 'educational', claiming to teach children numbers, colours, shapes etc. The marketing of such goods and services often seeks to appeal to parents' sense of what they *should* be doing in order to qualify as "good parents". The marketing of home computers frequently involves claims about how they can "help your child to get ahead" in the educational race (Nixon, 1998; Buckingham et al., 2001). It can be argued that the home computer could be seen as one of the indispensable symbolic goods of contemporary parenting (Cawson et al., 1995). The research suggests that this is not just marketing rhetoric either -

To put the point concretely, buying children personal computers may not only affect how much television they watch, but may also have consequences for their job prospects, family conversation, use of parks and shopping malls, confidence at school, and so on, as, too, may being unable to afford to buy a personal computer, or the decision to buy a games machine instead. (Livingstone et al, 2001, p. 5)

However, this is not a simple cause-and-effect situation and to claim that having a computer is a recipe for success would ignore the many social factors involved. Research suggests that the design of specific technologies does not determine how they will be used, rather technologies enter existing social milieu and they are appropriated and used in various ways by their users (Marvin, 1988). This is not an entirely new phenomenon. As Luke (1989) argues, the modern "invention" of childhood was accompanied by a whole range of educational tools for parents and children such as books, advice manuals and toys. What is new about this is the nature and scale of development. What is also developing and changing are the media environments in which children are growing up and the following section focuses the findings of a pan-European comparative study on these changing media environments.

1.4.4 Children's Changing Media Environments

Children's interactions with media are understood in this work in terms of "media environments" (Bovill and Livingstone, 2001). This term was developed in the 2001 European comparative study of children's changing engagement with the media where the authors asserted that "children and young people construct diverse lifestyles from a mix of different media, rarely if ever making use of just one medium" (p. 7). The aim of this study was to compare children's changing media environments and this was justified for the following reasons:

First, the media are playing an ever-greater role in children's leisure, whether measured in terms of family income, use of time and space, or importance within the conduct of social relations. Second, the media are extending their influence throughout children's lives so that children's leisure can no longer be clearly separated from their education, their employment prospects, their participation in public activities, or their participation within the private realm of the family.

(Livingstone et al, 2001, p. 5)

The findings and discussion from the Children's Changing Media Environments (CCME) study are used in this work for three reasons. Firstly, this work represents a socially contextualised view of children's media environments as they are in a process of change. Secondly, while Ireland is not one of the twelve countries in which research was carried out, the large-scale and comparative nature of this work is a strong indicator of trends in this area. Finally, the objective of understanding the meanings, uses and impacts of children's changing media environments from a perspective that foregrounds the children's descriptions, opinions and discussions has been adopted in this work as a core principle underlying the empirical research. Some of the predominant findings of the CCME study are presented below. While this study is over a decade old at this point, it is still relevant in highlighting the changing media environments. It also is important to note that studies of

this scale are not done often and this represents the most recent study on this scale. This fact raises questions because there is a wealth of research done on children in relation to their media use, but it is being done by private companies.

Access, Use and Ownership

That parents control children's access, use and ownership of media technologies was mentioned above. However, in the CCME study (2001), it was found that even if children had access to certain technologies, they did not necessarily use them. Also, if children did not have direct access to technologies, they were resourceful in gaining access through friends. What emerges, as the more interesting question, in this instance, is what motivates children to choose certain media forms over others? This matter relates to social, cultural and psychological factors. For example, Facer and Furlong (2001), in a study focused on low users of ICT, identified the dominant construction of young home computer users is as "brainy" (academically successful) children. They found that children in the study associated the benefits of home computer ownership with intrinsic academic ability and suggested that this indicates that what are social and cultural inequalities become presented as biological inevitabilities.

In the CCME study, the significance of the bedroom as a place for media use was highlighted. As d'Haenens (2001) claims, having technology in children's bedrooms indicates a close integration of the medium into the child's life. The bedroom represents an experiment with identity; a place where children can exercise control. "Accounts of children's use of their bedrooms focus on the bedroom as a site for the consumption and display of consumer goods or as a private social space where young people can express and experiment with a sense of personal identity" (p. 180). Also, having media in one's bedroom makes sharing media with friends more likely than when media are in communal areas of the home. It was found that younger children are less likely to have media in their

rooms and also children from higher socio economic status (SES) families. The research established that a sizeable proportion of children's time is spent in the privacy of their bedrooms and if these rooms are media-rich, then they spend longer there. From the parents perspective, this makes regulation of their children's media more difficult (Livingstone and Bovill, 2001).

Taste in Content

With regard to children's media tastes, two of the findings of the CCME study (2001) are noteworthy. Firstly, age and gender are the dominant determinants of children's taste, while the SES of the family or the location of various technologies within the home appear to have little influence. In comparing findings across Europe, it was found that similarities in tastes among children of the same age groups or gender greatly outnumber differences, which can be taken to be a strong indicator of an international media culture.

In addition to this, individual expressions of taste can be important elements in how children construct their identity (Livingstone and Bovill, 2001) both in relation to their gender and their age. Gender, in particular, is a significant element to consider when discussing children's media culture and this point is further developed below.

There was also evidence that preferences for various content could be a motivating factor in using new technologies. With respect to "new" media, Brown (1976), suggested that children will reorient their media use to a new technology if three conditions are met:

1. The medium represents a wide range of content;
2. The child can control the selection of content; and
3. It doesn't require specific skills or training to use it.

This suggests that children's preferences are not media-led but that they choose programs or games that are in line with their general interests and then they follow these interests across different media. While using new technologies could be considered a positive development,

there must also be recognition that other forms of media use may be displaced. With the advent of television, it was suggested that traditional reading culture would be displaced (McLuhan, 1964) and this was found to be a plausible argument in the comparative study. The findings show that children's pleasurable and interactive experiences with media have displaced their appetite for books (Beentjes et al, 2001). To what extent this represents a concern for education will be discussed in the final section on literacy.

Social Context of Use

The primary emphasis in this work is on thinking about ICT not simply in terms of exciting technological advances but within the social milieu of society and education. Media use has close links with family life. Studies have pointed to how television viewing can be expressive of power relations within homes (Morley, 1992) and it has also been shown to have a positive influence on family members' interactions (Lull, 1990). The CCME study found that although many families now own a number of sets, television still remains a major focus for family interaction (Pasquier, 2001) and this was also found in *Growing Up in Ireland* (2008). Television was a popular topic of discussion and children reported enjoying watching television primarily with their mothers. With computers and games consoles, the social context of use is different with mostly boys enjoying games machines on their own, rarely with a parent and seldom with a sister. The study found that game playing is a male-dominated area that is hard for girls to enter. It was also found that game playing is a more peer-oriented activity in contrast to television, which is more family-oriented.

Discussion of media rules is a good way to understand the role and importance of media in the home (Pasquier, 2001). While in the media, discussion of the dangers of violent games or programmes are of central concern, in the CCME research it was found that these were often considered by parents to be "third-person problems" such that they

apply to other people's children. Rules relating to media were found to be quite lax and centred around issues such as getting homework done and going to bed. Pasquier (2001) suggests that this laxity in media control is due to many factors, one of which is the changing patterns of parental authority stating that "nowadays children's duty is less to obey than to succeed at school, and decisions in families have been democratized toward cooperation between parents and children" (p. 172). Children were found to be familiar with their parents concerns about television such as it being bad for their eyes. Rules around media use can also be considered an integral aspect of growing up and negotiating power between adults and children.

Where media use in the home has been considered as a safe space of leisure, it was asserted in the findings of CCME (2001) that the home can no longer be considered a place where parents can prevent their children from knowing too much about the world. They suggest that media weaken the traditional power relations between children and parents and that a child learning new media puts their parents at a greater disadvantage. One of the key findings is the difference in attitudes towards media. "For children, computers are fun; for parents they are socially important. This is a major divergence, resulting in fundamental differences in attitudes" (Pasquier, 2001, p. 174). There was also evidence that different media encourage different social practices. Television is still a family medium but is moving towards more solitary use. If children have their own TV, they are most likely to watch their favourite programmes alone, but computer game playing appears to be an important peer-activity that encourages social interaction with friends. There was one common point across all the countries in this study and that was that children prefer spending time with their friends than media (Suoninen, 2001). The interaction with peers and use of media was one area where there were vast differences between countries, and this might be attributed to differing attitudes to family culture and child-rearing practices in different countries. In essence, in countries where children spend more time outside the

home with friends, they also spend more time enjoying media with their friends. Talking about media with friends is the most important way that media affect peer group relations. Swapping and sharing media are also common and cheap ways of gaining access to various media. Television-related talk is used by older children as a way of talking about various subjects while for younger children it is used as a stimulus to play. Books were found to be a significant part of girls' culture but not boys'. Boys talk about computers and games, sharing knowledge and skills, and talking about hardware and software. Media products were also used as status symbols among peers. Having certain things that are highly valued can gain appreciation from peers. In all, media-related peer culture was found to develop with age.

Gender

There were consistent differences between boys' and girls' media tastes and patterns of usage across Europe. Boys were more technologically oriented than girls and more likely to have technology in their rooms, while girls were more likely to have a bookshelf (Lemish, Liebes, and Seidman, 2001). Television was the dominant medium, and its appeal transcends gender with little difference in the amount boys and girls watch. Boys were more attracted to computers and the Internet, with their time devoted to these being twice as high as girls, and time spent on electronic games being three times the girls. While girls spend more time reading than boys, they also read different materials; preferring magazines and books while boys are more likely to read comics and newspapers.

The gender divide is exacerbated by the fact that boys and girls have different interests and have gendered preferences when it comes to media content. Boys prefer cartoons when they are younger, and sport as they get older. Younger girls are interested in animals and wildlife, but as they get older express more interest in human relationships. More girls were attracted to typically male genres than vice versa. This can be understood

as “female adjustments to male interests” and is supported by the fact that the media industry targets more of their content at boys (Lemish et al, 2001, p. 270). With regard to how the children socialise, girls are more likely to be family-oriented and prefer to spend time with one friend. Boys were more likely to socialise in groups, in particular with computer games where boys reported often playing with friends. This also links to the assertion above that television is considered a more family-related medium while computer games tend to be more peer-oriented.

Different patterns of family relationships were also found in relation to gender. There were different rules, with boys having more rules regarding computer time and girls having more rules regarding the telephone. Parents frequently talk to their children about media that interest them, but the topic of conversation is divided along lines of gender. Mothers are more likely to talk to their daughters about music, books and going out. Older males such as fathers and older brothers often serve as a role model initiating younger boys into the computer world. According to the CCME study, “gender lines divide the family space in the same way that they segment children’s culture” (Lemish et al, 2001, p. 275).

“Gender differences are assumed to be constructed through complex processes such as socialisation, cultivation, and psychological development” (Lemish et al., 2001, p. 263). The ways boys and girls interact with media, can, therefore, be involved in the process of gender development. Boys enjoy sports and adventure genres that show active higher status males who are in control of themselves and others, while girls are interested in soaps, magazines and romance fiction, and these are genres that frequently define women through their relationships with men (Lemish et al, 2001). It was also found that girls, when discussing gender differences, positioned themselves as superior to boy’s culture, criticising it as aggressive and childish. While there is a technology divide, this is more likely created by the content rather than the media. “This relatively unchallenged assumption, that computer playing requires technological skills for which boys are better socialised, is deeply

rooted in the historical perception of technology as essentially masculine” (Lemish et al, 2001, p. 279). Drotner (1999) argued that the female resistance to computers was more likely as a result of their lack of interest in computer games than a reluctance to use a computer. This finding was supported in the CCME study as it was found that when girls are offered options that are of interest to them, they use the computer. This “may be a genuine indication of the shrinking of the gender gap and the incorporation of girls in a seemingly unisex, but rather masculine, world of popular culture” (Lemish et al, 2001, p. 280).

The CCME study is indicative of trends in relation to children’s media environments in 2001. It prompts questions in relation to Irish children’s media use and also, given the developments within ICT in the past decade, inspires curiosity about how these may influence children’s media use.

1.4.5 Children’s Changing Media Products

The CCME study highlights that children’s media environments are changing and are integral to their lives. In addition to this, children’s cultural products are evolving in many ways. In order to illustrate this point, the example of Pokémon, as deconstructed by Buckingham and Sefton-Green (2003), is adapted here. It is ineffective to try to conceive of Pokémon in any kind of traditional understanding of a media product. Pokémon is best described as a “craze” or a “phenomenon”. Although it started with a computer game, it also encompasses an animated television show, a card game, soft toys and a magazine. Essentially, it was designed as a cross-media enterprise where one doesn’t have to have ever played the computer game to be a part of the craze. Traditionally, in children’s culture, there has been an emphasis on ‘collecting’ and Pokémon is no different; both within the computer game itself where the aim is to collect all the species, and also with the merchandising, where children collect and swap cards and other products. Pokémon, was

also engineered to have mass appeal across age, gender and ethnic boundaries. Children's markets are notoriously difficult to secure because children grow out of things at such a fast rate, and the idea of being too grown up for something is important to them. With Pokémon, there are a number of overlapping categories: soft toys for the under-fives, TV cartoons for four- to nine-year-olds, trading cards for six- to ten year-olds, computer games for seven- to twelve-year-olds. Thus, children can grow, change and develop with Pokémon. From a marketing point of view this is very effective.

Gender is also a difficult obstacle to overcome when trying to appeal to as broad a market as possible, as research shows that children often reject media products that are for the opposite sex (Buckingham, 1993). With Pokémon, the hero, Ash Ketchum, is male but preadolescent and essentially asexual. He does exhibit some of the traditionally male gender traits, such as being competitive and adventurous. However, he also has a pet - Pikachu - who he must care for and nurture. Throughout the game, both stereotypically masculine and feminine traits are called for – the game is about collecting and competing, but once caught the species need to be nurtured and trained. Pokémon was also designed to have universal cultural appeal. Although it was created in Japan and represents the themes that are associated with Japanese culture and animation, the name is derived from the English “Pocket Monster” and the faces of the species are ethnically ambiguous. The universal themes of childhood, such as the need for nurturing and the competitive search for mastery, are reflected.

In their exploration of Pokémon, Buckingham and Sefton-Green conclude that Pokémon positively requires and depends upon activity to an extent that many other forms of media consumption do not. Although this is not entirely novel, the scale of interaction is uncharted territory. For children, Pokémon represents something that you *do*, it's not just something you read or watch or *consume*. In anthropological terms this kind of activity could be described as a “cultural practice”. Yet while the ‘doing’ clearly requires active

participation on the part of the “doers,” what is or can be done is dictated by forces or structures beyond their control. The practice of collecting the cards and playing the computer game is, to a large extent, determined by the work of the designers—and indeed by the operations of the market, which makes these commodities available. The rules that govern these particular cultural practices are therefore not, by and large, open to negotiation or change. This is a significant point. Much of the debate surrounding children’s use of new media technologies justifies the technology by asserting that children are actively engaged and learning new skills, skills necessary for the twenty-first century. However, the caveat must be added that corporations, whose primary aim is to make a profit, create these media products.

1.4.6 Children’s Learning is Changing

This discussion of children’s media culture has provided insights into children’s engagement with ICT, the various social contexts and changes that impact upon this, and also some of the arguments that surround the area. Arguments relating to childhood and the media are, essentially, arguments relating to pedagogy (Buckingham and Sefton-Green, 2003). That is, they are concerned with what children are learning and who is teaching them. Learning, in this context, refers not simply to the cognitive or mental process of learning; it is learning about how to behave, what to want and feel, and how to respond (Buckingham and Sefton-Green, 2003). It is about the production of subjectivities and “forms of consciousness”. There are a number of debates around pedagogy and how and why children learn.

In ways, many aspects of children’s use of ICT can be described as “educational,” in that they involve teaching and learning. While some of this teaching is carried out by texts, much of it is also carried out by children teaching each other; and, indeed, a great deal of the learning happens without any overt instruction at all. This could be described as creating or

facilitating “learning communities”. Children’s media products – television shows and video games - symbolise the explicit struggle between two competing types of teachers, the producers of the media texts and the parents who seek to mediate their children’s relationship with it. If products teach children to be competent and enable the development of cognitive skills this is positive. But if they teach children to be greedy and acquisitive, or they undermine their formal education or development of their social skills, this is of concern. The result is skating the fine line between espousing a pedagogy of empowerment and adopting a more protectionist stance.

This concept of the pedagogy in children’s media culture also raises questions about children’s engagement and learning in school. As Lawrence Grossberg (1995) asserted, what often inhibits our understanding of the pedagogical power of popular culture is society’s failure to acknowledge the role of dominant power in shaping personal experiences and views of the world. The theoretical perspective of this work could not ignore the pedagogical power that children’s media products may have for children. While it is possible that through active engagement they are learning a variety of valuable lessons, it is also necessary to acknowledge that the media culture that is so engaging is the creation of companies whose primary motivation is to make profit. Thus, it could be asserted that their emphasis is more on children as consumers rather than learners. This represents an area that is worthy of consideration for those who work in the area of education.

1.5 Conclusions of Chapter One

Given the interactive and dynamic relationship between education and society, it is asserted that changes in the Digital Age, both in general in society and more specifically in children’s lives, are likely to impact on learning. The theoretical perspective of this work sees meaning and knowledge as socially constructed, in a constant state of flux and bearing

the impress of ideological hegemony. Eschewing a simplistic definition of the Digital Age, three social theories of the Digital Age that emphasise different elements or concerns were examined. In his conception of the Post-Industrial Society, Bell was enthusiastic about occupational changes and both qualitative and quantitative improvements in theoretical knowledge. On the other hand, Schiller was more critical, asserting that in spite of appearing to have more access to information, the general public is the “information poor”, as information becomes increasingly available to those who have the ability to pay for it, thus reinforcing class divides. Habermas’ ideal of the public sphere highlights the importance of maintaining an informed citizenry in order to protect the functioning of democracy and this underlines Schiller’s concerns. In line with Gramsci’s claim that through critical reflection people can begin to see the fragmented and incoherent wisdom of common sense, this exploration of social theories of the Digital Age was intended to give a critical reading of the Digital Age, so that within education we can move towards a theoretically informed practice.

The second core element of this chapter was to explore children’s media culture within the Digital Age. The purpose of this was twofold. Firstly, it was intended to draw the reader’s attention to the many ways of understanding the complexity of what is happening in children’s lives. Secondly, it represents a vindication that children are already living and learning in the Digital Age. Given the failure of ICTs to become embedded in day-to-day schooling, and the acknowledgement that children are using ICTs in their leisure time (DES, 2008a), it is asserted that children’s current engagement with ICTs represents an area where the existing aims of education may be more fully realised. It also indicates where formal education could enable children to become critical ICT users within the Digital Age.

Chapter One has provided a detailed social context within which to continue this exploration of learning in the Digital Age. Building on this foundation, Chapter Two

examines ICT policy in education, detailing the themes and discourses prominent in this policy area. The discussion concludes with an exploration of what it means to be literate in the Digital Age, advocating a vision of learning changing that takes account of children's media culture and the broader concerns of the Digital Age discussed in this chapter.

CHAPTER 2

2.1 Introduction

The first chapter of this work was about the Digital Age. Through a critical theory lens it explored social theories of the Digital Age and also children's experiences with ICT outside of school. In this way, Chapter One established the broader context for understanding ICT in education. Chapter Two is about formal education in the Digital Age. This chapter is in two parts. The first examines how the Irish education system responded to the perceived changes in society in the past decade, focusing on the development of ICT policy and locating this within broader policy developments. There is also a discussion of the discourses apparent within ICT Policy. The second part focuses on learning and critical literacy in the Digital Age.

2.2 Education Policy in the Digital Age

2.2.1 Implementing the Information Society

ICT Policy and Education

In order to understand the context in which digital technologies came to be promoted in Irish education, it is necessary to begin by locating the discussion within the broader perspective of international policy developments that relate to education and ICT.

As is the case in many other countries, the introduction and development of ICT in Irish primary schools can be understood as being part of a larger national governmental initiative to respond to the Information Society. Selwyn and Brown (2000) argue that, as a result of the mobilization of global financial markets, national governments around the world have been struggling to maintain their traditional decision-making power. This has resulted in policy initiatives aimed at securing competitive advantage over other countries

by investing in ICT in education and also extending a nation-wide information infrastructure. According to Selwyn and Brown (2000), given the parallel concerns of governments to extend education and establish information infrastructures, it is “unsurprising that the two policy areas have rapidly converged” (p. 662). At present, nearly every country in the world, regardless of geopolitical, economic or social circumstance, has implemented an educational technology strategy (Selwyn, 2011a). In 1999, the ‘Action Plan for Implementing the Information Society in Ireland’ was announced. It outlined the intended strategies for developing telecommunications infrastructure, electronic commerce and business opportunities, and legislative and regulatory measures to implement the Information Society. With respect to formal education, the action plan stated “[R]apid application of the Education Technology Investment Fund and implementation of the Schools IT 2000 Initiative will be pursued...” (1999, p. 19). ICT education policy and national information infrastructures have become mutually implicit in one another and this is a core principle in understanding both the role of technology in contemporary education and also the “global chase after elearning” (Zhao *et al*, 2005, p. 673).

What this account of the evolution of education policy and the role that ICT policy plays within a larger framework of national and EU policy highlights is the need to understand educational technology in terms of its broader relationships with other elements of society. The use of digital technology in classrooms is influenced not only by a pedagogical imperative but also by a number of stakeholders and interests operating within public policy.

Changes in Educational Policy in Ireland

The concerted effort to promote ICT in schools in Ireland in recent years coincided with a period of significant change within Irish education policy. According to Sugrue (2004), Irish education witnessed unprecedented reform efforts from the 1990s onwards -

both primary and secondary sector curricula were revised and much research was done into topics such as adult education, special needs, educational disadvantage, early childhood education and lifelong learning. Between 1985 and 2000, curriculum development transformed from a highly centralised process, as part of the Department of Education, to a more open and participative process. The Interim Curriculum and Examinations Board (CEB) established in 1984, subsequently the National Council for Curriculum and Assessment (NCCA), was endowed with the authority for curriculum change. The NCCA was later established as a statutory body in the Education Act (1998) and was charged with improving the quality of education through continuous review of curriculum and assessment provision. Funded by Department of Education and Skills (DES), the NCCA have a small executive staff and support their work by forming sub-committees made up of representatives from the various bodies working in education in what is known as the “partnership” approach. According to Sugrue (2004) the politics and power relations surrounding educational change in Ireland are largely invisible as a result of this partnership approach.

Education Reform around the World

Large-scale changes in education systems have been evident in recent years in many countries around the world. Ball (1998) writes of supranational influences on social and education policy, in the context of a new economic order, such as the World Bank and the OECD. Within the area of ICT in education, one of the key measures for progress in ICT has been the ratio of students to computers. This is a quantitative measure and illustrates nothing in terms of changes or improvements in pedagogical practice.

Ball (1999) suggests that there now exists a “paradigm convergence” in education policy where countries with very different histories of education and social policy have, in recent years, produced policies with common underlying principles, similar operational

mechanisms and similar effects with respect to practical procedures and in terms of social justice. Although there are national differences, what is common among these policies is a close interlinking of education with employability, productivity and the wealth of the nation. Carter and O'Neill (1995) propose a "new orthodoxy" in education policy that involves a reorientation "in the relationship between politics, government and education in complex Western post-industrialised countries" (p. 9). Elements of this new orthodoxy are evident in policies in Irish education. Educational ICT policies frequently mention both the importance for the State in investing in education to ensure economic stability and competitiveness. There has also been significant investment and input into education by corporate interests. Schools, through receiving grants for ICT, are now becoming lucrative consumers in the marketplace. Finally, the "partnership" process reflects increased community input into education. For example, Ireland's high-tech lobby group 'ICT Ireland' has worked together with representatives from the education sector and the large multinational high-tech companies to produce recommendations for the Minister for Education (Smart Schools = Smart Economy Report, 2009). Their opening statement is a resounding example of this "new orthodoxy" in education policy:

Ireland's national recovery will be rooted in further developing our outstanding education system. Schools and colleges are key contributors to economic growth and national competitiveness, providing successive generations with the skills and abilities necessary for a vibrant economy and inclusive society.... Our education system must continue to be responsive to and supportive of the economic life of this country (2009, p. 5).

This new orthodoxy in education policy points to the global influences on education. As Ball writes, it is necessary to place education policies in a global context to "underline the need to see these policies, in part at least, as embedded in powerful, coherent global *policyscapes*" (*italics in original*) (1999, p. 204).

2.2.2 Policy as Text, Policy as Discourse

At it's most basic, education policy represents the State's formal commitments to its citizens with regard to its responsibility to deliver and regulate education. ICT education policy can be understood as the "formalisation of state intent to guide the implementation of digital technologies throughout national school systems" (Selwyn, 2011a, p. 56). The policy-making process can have both a series of intended and unintended effects, not least because it is trying to accomplish two very significant goals. That is, they have both explicit objectives and also wider exhortative functions.

To understand this dual role of policy-making, it is helpful to refer to Ball's conceptions of "policy as text" and "policy as discourse" (1994). "Policy as text" refers to the documents that are developed, published and then read in schools. Although this may seem straightforward, Ball warns that the texts are "not necessarily clear or closed or complete" (1994, p. 16). When policies reach schools they are the "cannibalized products of multiple (but circumscribed) influences and agendas" (1994, p. 16). Further to this, the policy text does not enter a social vacuum in the school. The response, interpretation and implementation of the policy, depends on the collective and individual readings of the policy by schools and teachers. Policy texts, therefore, enter existing patterns of inequality and are taken up differently in different settings. "Policy is not exterior to inequalities, although it may change them; it is also affected, inflected and deflected by them" (1994, p. 17).

One of the most significant aspects of policy-making is the role it plays in shaping wider understandings and legitimizing certain policy positions. Legitimation refers to the ways in which policy-makers generate confidence in their policies at different levels and this is done through policy as discourse. *Legitimation is what makes policies appear to be common sense.* This is what Ball refers to as "policy as discourse" and in so doing he is invoking the work of Foucault on discourse as outlined in the theoretical perspective.

Acknowledging policy as discourse highlights the need to examine the ideological dimensions of what is being said about digital technology within education and broader social discourses. As Selwyn (2011a) writes, it is not enough to try to identify the impact of education policy on education practice, rather policy has to be viewed in terms of both structural mechanisms and also its wider discursive role. The “mediated nature of state policy-making means that public policy is perhaps best understood as an effort to stimulate change or maintain the *status quo*, rather than a direct means of alteration and adjustment” (p. 57). Ball contends that policy is not policy as text or policy as discourse but that they are “implicit in one another” (1994, p. 15). The following section explores some prominent themes from a range of ICT policies.

2.2.3 Visions of ICT in Education

In this section, the vision statements and executive summaries of ten policy texts are discussed and examined. In highlighting common themes, it is possible to discern the discourses that these policies espouse. Two are national policies, two are EU policies, and six relate specifically to ICT in education. The discussion is divided into the two types of policies mentioned in this work – national and EU ICT policies, and educational ICT policies. Many of the themes present in the national and European policies can be seen as underpinning the visions for ICT in education.

National and EU ICT Policies

As mentioned above, Ireland’s National policies are best understood in the context of a global policyscape (Ball, 1999). While Ireland affects autonomy over how the policy-process is shaped, it is necessary to acknowledge other supranational forces that influence the process. In the two Irish Action Plans used in this analysis, there is reference to EU policy and directives and these four policies can be understood as being conceptually related

to each other. Within these documents four themes were prominent; a new era; planning; optimism and challenges; and improved participation and social inclusion.

A New Era

Many of the policies are founded on the principle that we have now entered a new era. This new era heralds “phenomenal” change where societies are being “transformed” into information societies. The term information society is defined explicitly in one document “The phrase Information Society refers to the increasing contemporary significance of information and communication technologies (ICTs)” (2002 Action Plan, p. 1). In light of the discussion in Chapter One, this definition of the information society is underdeveloped. With the focus being solely on technology, it is indicative of a technological determinist stance. Also the lack of consideration of information and how it has changed or evolved seems a significant oversight. In Chapter One, Bell’s conception of the Post-Industrial society was explored and this was because when change is mentioned in these policies, the conception of change is understood as being linked at some level to the idea of the Post-Industrial Society. For example, both of the national Action Plans (1999, 2002) compare the changes to an industrial revolution likening it to “electricity in the twentieth [century], and railroads in the nineteenth” (2002, p. 1). These apparently profound changes have impacted on every area of contemporary life not least in terms of policymaking where the 2002 Action Plan states “[T]his transformation is bringing about the single most dynamic shift in the public policy environment in the history of the State” (p. 1).

Policy and planning

The two EU plans also refer to policy and emphasise the need for new forms of legislature and regulation (2002, 2005). Again, viewing the information society as being led by technological developments, the i2010 Action Plan (2005) asserts that we are now in an era of digital convergence which necessitates a new policy process because “digital

convergence requires policy convergence” and a “willingness to adapt regulatory frameworks where needed so they are consistent with the emerging digital economy” (p. 3).

In light of the dynamic shift in policy-making, there are difficulties in relation to planning. A common acknowledgement in all the policies is the rapid pace of change and the rapid response this requires. Given that we are in the midst of a new phenomenon that affects all areas of social life, the economy and governance, knowing how to proceed into uncharted territory is a daunting task. The lack of reliable research in this area is mentioned. Furthermore, this transformation is still progressing. With this in mind, it is not surprising that ICT policies tend to call for “flexibility”, emphasise the need for research and development, and recognise the need to “position ourselves to remain responsive to a new environment of ongoing change” (Action Plan, 2002, p. 5). At the European level, given the aim to make the European Union the most competitive and dynamic knowledge-based economy with improved employment and social cohesion by 2010 (i2010, 2005), the imperative to co-ordinate and focus policies is central.

Optimism and challenges

The attitude to this fundamental transformation is one of optimistic enthusiasm in the face of major challenges. The Digital Age is essentially seen as an opportunity to improve the economic and social lives of countries and continents. The challenge is maintaining national competitiveness in the global market place. In the twenty-first century, it is claimed that ICT is central to national and international competitiveness and an indicator of a countries progress (i2010, 2005). Ireland’s first Action Plan (1999) was presented as being vital for Ireland to become “both an early mover and a global player in the Information Society”(p. 2). This stance was reiterated in 2002 with the caveat that standards in other countries were rising all the time, emphasising that all success is relative. In order to compete with these countries, investing in education is seen as a crucial factor.

This sentiment was acknowledged recently in the Smart Schools=Smart Economy Report (2009):

Many countries, including Asian and Eastern European countries, have already launched national skills development programmes, and are building a competitive advantage. However, based on the quality of our school system and with renewed focus and investment in the development of a digital learning environment, Ireland can foster the key skills for a competitive knowledge-based economy (p. 2)

This statement unequivocally links benefits for the economy with benefits for society. “What is good for the economy is good for society” is a dominant message, with the school system seen to be the channel for building Ireland’s competitive advantage. This economic undertone is also evident in EU policy where “New services, applications and content will create new markets and provide the means to increase productivity and hence growth and employment throughout the economy” (eEurope 2005, 2002, p. 2). The benefit for citizens is described as “more convenient access to information and communication tools” (p. 3). While it is accepted that society and the economy are intimately linked, and growth and employment can be positive for societies, and hopefully citizens can stand to gain more than simply “more convenient access” to ICT, there is a danger in the two becoming conflated. What is problematic about this idea of the benefits for the economy and society being tied so closely together becomes clearer when we consider the driving force behind this economic growth – the market. According to EU policy in this area, “[M]ost services are provided by the market. Developing new services needs significant investment, most of it from the private sector” (i2005, 2002, p. 2). In aiming to stimulate investment from private sources, the EU plan is “to ensure legislation does not unnecessarily hamper new services” (i2010, 2005, p. 3). These efforts to stimulate the market and private investment by adapting legislation signal that it is not ICTs that are the driving force behind this phenomenal transformation of contemporary society. Rather it is

the market. Furthermore, with the EU and Ireland's aim to be global leaders in the information society, adapting policy and regulation so as not to "hamper new services" or to be consistent with developments in the emergent digital economy does not indicate a powerful leadership role, rather it reflects a realm of policy that follows technological innovation, or at best removes obstacles, so that the logic of the market can run its course.

In eEurope 2005, it is claimed that action is needed to "create a favourable environment for private investment. This means not only developing an investment friendly legal framework but also taking action that stimulates demand and so reduces uncertainty to private investors" (2002, p. 3). How demand will be stimulated is not outlined explicitly but it seems likely that the legitimization of the use of ICT within society and education - the construction of a discourse that presents it as taken-for-granted and necessary - would represent the impetus for societies to embrace ICT.

Participation and inclusion

A key element of all the policies at national and EU level is a commitment to the development of ICT in order to promote inclusion. In Irish policy, this theme is evident also as one of the rationales behind the New Connections Action Plan (2002) is "to ensure that our development as an Information Society is inclusive, and builds on the potential of ICTs to address issues of disadvantage and exclusion". ICTs are presented as having the potential to improve governance and social issues such as the health and welfare of the citizenry. They are also viewed as enabling a more participative democracy. However, the reality of digital inclusion or exclusion is more complex than the policies appear to acknowledge. As the aforementioned quote from Ball (1999) highlighted, policies are not exterior to inequalities rather they enter existing relationships of inequality. That ICTs can bridge social divides and make society more equal or accessible has been the subject of some debate within academic research and discussion. Not only do many authors believe that

technologies cannot change existing patterns of inequality but they assert that as ICTs become more integrated into social life, social exclusion is more likely to be exacerbated (Selwyn, 2004). This is what is generally referred to as the 'digital divide' and is discussed in further detail after the section on Education policies.

ICT Education Policies

One of the key words in documents relating to ICT is "potential" and the field of education represents a significant location where this can be realized. That education can serve the needs of the State in the information society, as proposed by the national and EU policies, is evident in educational policies. For example the *Blueprint for the future of ICT in Education* (2001) states that it "is vital to ensure that we acquire important skills needed to secure our future economic wellbeing"(p. 3). Education is also presented as a key component in ensuring that people can participate in this new era. Furthermore, ICTs are credited with transforming education:

These broader challenges of what is referred to as the information society/knowledge society have profound implications for curriculum and for schools, teachers and students and suggests that ICT has the potential to transform all aspects of student education...(NCCA discussion paper, 2004)

The themes of transformation, rapid change and the close linking of the needs of the State with education that were to the fore in National and EU policies can be seen to be replicated in education policies. Also, the idea that the Digital Age can be more inclusive but that this inclusion requires certain skills that must be taught is evident. As the Inspector's Report (2008, p. xi) states "if our young people are to live full lives in a world transformed by ICT, they need to have opportunities to acquire and develop ICT skills from an early age."

Consensus as to the necessary “skills” for participation in the information society is not evident in the six documents here. Having a clear concept of what children and young people need from formal state education is a crucial element in providing direction for educators. The Minister’s Strategy Group reported that “learning is changing” (2008, p. 1) and ICT is a pivotal force in bringing about this change. However, the way ICT is constructed within the ICT Framework (2007) could not be considered a “force” in shaping education. On the contrary, it apparently seeks to limit and control how ICTs are integrated into education, thereby moving into what Selwyn (2011a) referred to as ‘soft determinism’. When the ICT framework was published in 2007 the emphasis was on skills, knowledge and attitudes:

“The ICT Framework offers schools a **structured approach to using ICT in curriculum and assessment** by identifying the types of learning with ICT (including knowledge, skills and attitudes) appropriate for students during the period of compulsory education. The ICT Framework is **not a curriculum area or a syllabus**. It is not presented as an add-on to teaching and learning but as a tool to help teachers” (2007, p. 3) (bold in original).

From this stance, ICTs do not represent anything as radical as a transformation of education and learning, nor could it be claimed that ICTs are a pivotal force, rather it is conceived of as something that can “add value” to teaching and learning. In focusing on the Framework for ICT as being a tool for teachers the message appears to be that ICTs are something to be incorporated into other curricular areas.

The *Smart Schools=Smart Economy Report* (2009), taking a moderately different stance, outlines a long list of “21st century skills” such as the ability to: critically analyse information; to use ICTs to be creative and inventive; to be adept at collaborating,

communicating and problem solving; to have initiative, entrepreneurship and leadership skills; and to be committed to life-long learning. These 21st century skills are evident in the vision of the discussion paper (2004) and in a less overt way in the ICT framework (2007). The Smart Schools report refers to the need for teachers to be ‘digitally literate’, but uses ‘digital learning’ for children to refer to the 21st century skills necessary in addition to the traditional skills of literacy and numeracy. To what extent these documents present a coherent vision for use of technology in education is questionable and this is viewed as being a fundamental problem.

As the previous section shows, ICTs are envisioned primarily as adding value to established curricular areas. What is striking is that ICTs are only ever written about in the most positive and pro-technological ways. Technology is viewed as having the power to motivate and stimulate learning in ways that traditional methods could not (Report of Minister’s Strategy Group, 2008), enable the extension and personalization of learning opportunities through virtual learning environments (Smart Schools Report, 2009) and also ameliorate the “digital divide” (NCCA Discussion paper, 2004, Smart Schools, 2009). The only level of concern addressed within education is in the area of Internet Safety. When considered in light of the discussion of views of childhood in a Digital Age and the oppositional views with respect to children’s use of ICTs at home it is difficult to accept the unbalanced embracing of ICTs in education.

The ICT Framework outlines how children and young people can learn through, with, and about ICT, with the focus being on how ICTs can add value to established curricular areas and in some instances extend children’s engagement with learning. Admittedly, the ICT Framework is a comprehensive and ambitious document. While concise and user friendly for teachers, it also encapsulates a broad and deep aspiration for how ICTs will be used in schools. It is suggested, however, that in an effort to distinguish itself from a technical skills-based approach it underplays the level of technical skill implied

within its “learning outcomes” and “learning opportunities”. For example, it lays out clearly how it views the goal for ICT in education:

Learning to use ICT is not a goal in itself: we do not have goals citing the ability to learn using a book or other resource. A more laudable goal for ICT is the use of ICT to afford new and enhanced opportunities for learning that would not have been available to the majority of learners without ICT.

Within the curriculum for Junior and Senior Infants, one of the objectives in the English Curriculum is to learn about the left to right orientation of reading a book (1999b, p. 16). Also, learning about pages, authors and illustrators are all part of the child’s early engagement with reading, just as children are taught how to use dictionaries and encyclopedias as resources as they grow older. While these are included within lessons relating to books, they are also explicit objectives for teachers’ planning. What this claim for a laudable goal for ICT also fails to acknowledge is that *new* technologies may need *new* lessons so that they can afford new and enhanced opportunities. Using a computer to create a video story is not the same as picking a book off a shelf and it does require a certain amount of explicitly taught skills. While the information society policies emphasise the great need for people to be taught skills lest they get left behind, the message within the ICT framework is that these skills are so basic that they need not be taught directly.

2.2.4 Discourses of the Digital Age

That ICT play a central role in the phenomenal, profound and transformative changes in contemporary society is without repudiation in the policies. The close linking of ICT policy with the emergent Information Society was a key element in promoting the ideology that computers are educational. In framing the information society as requiring a computer literate workforce, the use of technology in education is seen as a response to the needs of the economy. Emphasising the role of technological skill in participation and

inclusion can also be understood as creating rhetoric where those who fail to acquire the skills are at risk of unemployment and social disenfranchisement. This, according to Buckingham (2007), represents a discourse of technological skill that joins together education, the market and the future worker/consumer where “technology is presented as the primary driver of social and economic change and as the solution to any problems it might cause” (p. 16). Presented in this way, Robins and Webster (1999) suggest, there is a “discourse of inevitability” where the conversation is about how to use technology rather than if it should be used, or for what reasons. This discourse is apparent in ICT policies where technology is always presented as both beneficial and characterised by a sense of urgency to keep up with changes.

While discussions are focused on how ICT can be used to improve participation and citizenship (Mansell, 2002), it is also important to question the ways in which citizens are constructed as having a ‘right’ to participate and be included. Generating a national consensus that people have the “right” to access information, supports the development and promotion of ICT. However, in light of the discussion in Chapter One, the individual’s access to information may be more limited than ever before. Facer et al (2001) argue that the ‘knowledge economy’ is a capitalist economy and as such consumers need ICT skills so that they may access and consume these ‘knowledge industries’. If people do not acquire basic ICT skills, e-commerce is not possible. Through the discursive practices of the knowledge economy “...the individual’s subject position is constructed as that of technologically semi-skilled consumer” (Facer et al, 2001, p. 92). In this guise, the line between a basic information right and a call to consume is blurred. *Essentially, the discourse of the information society is a powerful example of hegemony.*

The discourse of the new era as a result of ICT that is so prevalent in these policies is not in itself a new concept. As Williams’ account of television (1975) in Chapter One highlighted, there was a similar ubiquitous “sense” that television could change everything.

Furthermore, predictions based on where technology would lead education in previous decades have largely turned out to be inaccurate and have been proven to have overestimated the impact that new technologies could have (Buckingham, 2007, Selwyn, 2011b³). This suggests that the claim that “learning is changing” due to the force of ICT is overly hopeful and simplistic. As Williams wrote, these rhetorical claims, although apparently common sense, mask the underlying historical and philosophical questions and in doing so undermine the assertion that these unresolved questions need to be debated and discussed. One of the underlying social issues that ICT are credited with being able to improve is that of inclusion and participation in society and the following section explores this claim.

2.2.5 Digital Divides

The ICT policies mentioned above are characterised by a commitment to improve and support ICT infrastructure so that Ireland, and Europe, can become leaders in the global market. They postulate that the information society means an informed society for everyone. However, in Chapter One, there was reference to Schiller’s (1996) assertion that as the market is increasingly influential in the information realm, it becomes the allocative mechanism for how information is accessed, differentiating along the lines of income and wealth. In this sense, the hierarchy of information largely remains within the existing hierarchy of social inequalities, with information being accessible to those who have the resources to pay for it. Within policy, the development of technological infrastructure is seen as “critical to unlocking the potential of ICTs to address issues of social disadvantage and exclusion” (Action Plan, 2002, p. 6). In this way, ICTs are seen to bridge the gap

³ Selwyn takes an historical approach to ‘new’ technologies in education in the twentieth century such as film, radio, television and microcomputing. His discussion illustrates both the idealistic discourses that accompanied these technologies that have parallels with current discourses, and also the ways in which technology is influenced by a range of social, cultural, political and economic factors.

between the information ‘haves’ and ‘have nots’ and thus Selwyn (2004) claims that in many ways “the digital divide can be seen as a practical embodiment of the wider theme of social inclusion” (p. 343). In an effort to address the digital divide, policies seek to provide access to ICT through schools and public libraries. The binary access-based understanding of the digital divide implies a purely technological solution – that of ensuring access to technologies.

However, in recent years, there is growing body of academic writing that questions the capacity of ICT to ameliorate the digital divide (Selwyn, 2004; Tsatsou, 2011; Meneses and Mimonó, 2010; Lewin, Mavers and Somekh, 2003) with earlier readings (i.e Norris, 2001) being viewed as overly simplistic and not taking into account the social contexts of ICT use and access. Essentially, there has been a move away from what Selwyn (2004) describes as the dichotomous view where people are either ‘information rich’ or ‘information poor’, to a more nuanced reading of the situation that is better described as a “continuum of digital inclusion” (Livingstone and Helsper, 2007, p. 671). In this understanding, “digital inequalities” are seen in terms of differences between individuals, and groups of individuals, in motivation, abilities, access and effective use (Meneses & Mimonó, 2010). Not only has there been a shift in the conceptualisation of a digital divide away from a dichotomous view, but there is also the assertion that there exists not one divide but a number of digital divides and that these are evolving over time (Tsatsou, 2011).

Many scholars, in their attempt to contextualise and understand digital divides, invoke the work of Bourdieu on cultural capital (Selwyn, 2004; Livingstone & Helsper, 2007). Briefly, Bourdieu (1984) used the term cultural capital as an analogy to financial capital as a source of social division. He argued that we use cultural capital to access and use knowledge and know-how in the world and to distinguish ourselves from other social groups. In fact, Selwyn (2004), in his exploration of the idea of participation in society, suggests that in addition to Bourdieu’s cultural, economic and social forms of capital, in the

information age “technological capital” is of fundamental importance implying that technological skills and literacies can also be a source of social division. The emphasis in this work is on children and schools and it cannot be assumed that children experience digital divides in the same way as adults. Thus, the following section looks in particular at research relating to children, digital divides and schools.

Children and Schools

The claim that ensuring access to ICT in schools can alleviate the digital divide is common in education policies (NCCA, 2004; Smart Schools, 2009). The research shows that there are a number of digital divides between children of different socio-economic backgrounds, genders and age. The CCME (2001) research shows that children from high SES backgrounds are more likely to have a computer at home and this produces a higher influence of social class on the possibility of developing computer literacy when they are in school. Children with computers in school and at home had the most positive attitudes to computers and were most confident about their competence, while children with less access had unimaginative attitudes and were largely unaware of the computer’s capabilities (Suss, 2001). It was also found that children from lower SES families were more often satisfied with school technology while children from middle-class backgrounds were more critical of school equipment. This may be in reference to the level of technology that the respective groups had at home, with children from higher SES backgrounds using better technology at home because the pace of technological development in the private sphere is much faster than in the public space of the school. The researchers also suggest that children who never use computers may be afraid of them or that they do not see the benefits - perceiving computers to be the domain of middle- or upper-class or “brainy” children. Thus, the CCME study concluded that psychological barriers are likely to underlie those cases where children, in spite of having access, do not use a medium.

There can also be a divide in terms of the capacity to use ICT, not just between children but also between teachers and children. Children who have developed computer skills at home reported being bored in school and as technologies develop, this gap in the knowledge level of students and possibly the teacher appears to be growing (Suss, 2001). What is most intriguing about the discussion of children's experiences of computers and the Internet, both of which can generally be found at schools and in homes, is that they are constructed in different ways in these different settings. When computers are introduced in schools, they are constructed according to institutional criteria – as a tool for learning, as something that parents and teachers consider to be important for the future. On the other hand, when introduced in the home, uses of computers and the Internet are led by the interests of the people who use them and are mostly used for games. Essentially:

new technological options are culturally and socially transformed into institutional structures and everyday practices. This transformation process takes place according to the specific conditions of cultures, political frameworks, concrete social situations and individual dispositions (Krotz and Hasebrink, 2001, p. 260).

In more recent research, Livingstone and Helsper (2007) found that as the market continues to innovate, higher SES households maintain their position of advantage. However, children from lower SES homes who have access to the Internet use it just as much as those from higher SES homes. This suggests that providing Internet access to low SES households can close the gap to some extent but this doesn't address the question of the ways in which technology is being used, and as such may not be addressing the possibility that some children have more "technological capital" than others.

Also, one must consider why young people are not using technology. For example, it was the case that teenagers who are non-users are voluntary drop-outs meaning that it is not lack of access that stops them from using the Internet (Livingstone & Helsper, 2007). They also found that there are very few children who do not use the Internet, in contrast to

adult populations, undermining an understanding of a digital divide between children who are users or non-users of technology and giving credence to their assertion that there exists a “continuum” of use. In seeking to address digital divides, providing home access can alleviate but not eliminate relative disadvantage. Also, different responses are needed for different age groups - for young children skills-based approaches are optimal but for older teenagers encouraging more frequent use will broaden their use (Livingstone & Helsper, 2007). Finally, Livingstone & Helsper (2007) posit that Internet use is hardly a goal in itself and they highlight the importance of understanding the different ways children and young people use various ICT. Within policy, certain kinds of uses are privileged over others. They point to the persistent finding that in seeking to provide access to the Internet in order to overcome disadvantage, policy-makers are generally dismayed when games are chosen over educational or career advancement uses (Buckingham et al, 2001).

Krotz and Hasebrink (2001) draw three conclusions from the data relating to the role of media in children’s lives and the urgency of addressing digital divides to ensure inclusion in the future. Firstly, they highlight that the diffusion of technology is an economically motivated process. This undermines concepts like public service, pluralism, and diversity in favour of economic parameters such as efficiency and shareholder value. Secondly, they claim ICT will play an increasingly important role in the process of socialisation and while this might widen the communicative options, it supports a general trend towards individualisation. Finally, paths of diffusion are not linear, and different children develop different competencies, and this plurality leads to different competency gaps.

The data strongly suggest that in the future the relative importance of computer use at home will grow because the school systems do not as yet seem to be able to keep pace with the development of new hardware and software in the digital world. Thus, it is unlikely that new media access through schools will reduce existing social inequalities by itself (Krotz and Hasebrink, 2001).

Teaching ICT

The findings and recommendations of the CCME study are interesting in that they advocate a position that is not to the fore in ICT policies. In seeking to address digital divides and enable children and young people to live in a society that is increasingly mediated by technology, the recommendation is to teach media literacy skills. It asserted that a major aim of schools is to provide basic cultural competencies to every pupil and, in the Digital Age, this should include media literacy. By emphasising the need for media literacy, the researchers in the CCME study are referring to schools doing more than providing access to computers or the Internet. They highlight that schools, like homes, bedrooms and even countries, can be media-rich or media-poor. It is not simply a case of media being absent or present; rather it is how and to what extent they are used. Suss (2001) reports that new media should be used in a way that provides advantages over other forms of learning and being critical and conscious of the impacts of the media itself. Media education in schools “should involve helping young people to reflect on their use of new media at home in their leisure time and understand the influence of new media on society” (Suss, 2001, p. 222). Furthermore, it is concluded that teachers are “not yet prepared enough to teach computer and Internet competencies and the deal with the social aspects of new media” (Suss, 2001, p. 237).

It is clear that the CCME study in focusing on children’s interactions with ICT and their changing media environment leads to different conclusions than the ICT education policies that are caught up in market driven discourses. The call for media literacy broadens the understanding of social inclusion in the Digital Age to the level of critical skills needed. This emphasis on developing children’s critical skills in relation to their use of ICT represents a challenge for education that is lost when the focus is primarily on how education can be used to secure Ireland’s competitive advantage.

2.2.6 Envisioning Change in Education

The discussion above highlights a number of points. Firstly, it is necessary to acknowledge that policy implementation with respect to ICT in education should be understood within the context of both educational changes that have happened in recent decades and also within the context of national and supranational “policyscapes”. What the exposition of the prominent themes of ICT policies shows is the close linking of the aims of education, technology and the market. What is remarkable in the education policies is that there is very little discussion of the children’s engagement with technology outside of school. In this sense, they seem to be at odds with one of the core principles of the Revised Curriculum; that “the child’s existing knowledge and experience form the base for learning” (1999a, p. 8). In their report to the Minister for Education in 2008, the strategy group did acknowledge that:

Increasingly, young people are expert users of ICT and engage fluently and actively with the digital world in their everyday lives ... Essentially, they engage in informal learning across a continuum of digital activity in ingenious and impressive ways.

We need to find ways of incorporating these new skills and experiences into the formal learning environment (2008a, p. 1)

However, as the section on children’s media culture established, how computers and ICT use are constructed in schools as opposed to at home are very different and this may make it difficult to find ways of incorporating their skills into their experiences in the formal learning environment.

The second significant point to note is the convergence of discussions relating to digital divides and social inclusion. The definition of digital divides has now moved beyond a simplistic notion of impediments to accessing technologies in favour of a more contextualised understanding that acknowledges “a hierarchy of access to various forms of technology in various contexts, resulting in different levels of engagement and

consequences” (Selwyn, 2004, p. 351). With this more nuanced understanding, it is clear that a simple technological fix will not bridge the divides, rather a number of varying solutions need to be offered depending both on the context of the divide and what policy-makers are trying to accomplish.

This also has implications for education and how we approach teaching and learning using ICTs, for the above discussion points to the broader aims of education that relate to citizenship and participation in society. Given the emphasis in this work on the concept of society and participation as active citizens as opposed to consumers, the emphasis in the final section of the review of literature is on the critical literacy skills in the Digital Age. While the use of ICT is presented in policy as a tool to enhance and enrich learning in existing curricular areas, the final section of this review of literature advances the idea that the use of ICT could in fact represent a more substantive opportunity within formal education.

2.3 Literacy in the Digital Age

2.3.1 Introduction – Recapitulation of the Critical Theory Perspective

In this final section of the Literature Review, the assertion that education has a key role to play in fostering social inclusion and bridging digital divides in the Digital Age is central, and is explored through a discussion of literacy. It is necessary to begin by briefly recapitulating the critical theory perspective, as this is integral to the discussion of literacy that follows. A critical theory lens was chosen as it allows for a socially committed analysis that acknowledges the historical and political context in the construction of knowledge (Kearney, 1986). Reference was made to Foucault’s assertion that “power produces knowledge” (1984, p. 175) and to further examine how power and knowledge operate within society, Gramsci’s (1971) and Hall’s (1986, 1997) writings on hegemony, ideology

and common sense were discussed.

Gramsci used the term hegemony to describe how one section of society maintains dominance over subordinated classes and, crucially, understood this domination as a process of *negotiation* in which the subordinated people participate in their domination. Hall (1986) further developed this analysis writing about the ways in which the mass media systematically reinforce the dominant world-view so that the concerns of the dominant become shared concerns for all. What is most significant, however, is that Gramsci believes that if we broaden our thinking to a more coherent understanding of the world and critically reflect, it is possible to develop a theoretically informed practice or “praxis”. In short, for Gramsci, the function of critical theory is to “expose the manner in which this process of ideological persuasion translates itself from a cultural invention into a natural assumption” (Kearney, 1986, p. 174).

This has been the inspiration for this work – to eschew a common sense attitude to ICT in education in favour of developing a broader and more coherent picture and critically reflecting on information and communication in the Digital Age, children’s media culture and ICT policy. In providing this detailed theoretical reflection, it is now possible to move the discussion forward to a theoretically informed praxis (Gramsci, 1971). This is done through the discussion of the concept of critical literacy. The final section of the review of literature uses the insights of Paulo Freire (2008) to advance an understanding of literacy praxis that can be at the core of education for critical consciousness.

2.3.2 Models of Literacy

Literacy is a contested concept (Luke, 2000) studied by anthropologists, psychologists, social psychologists, historians and educationalists, among others (Street, 1984). While approaches and conclusions are varied, Street argues that they can be divided into two general models – the autonomous model and the ideological model. The

autonomous model of literacy encompasses those theorists who assume a single direction in which literacy development can be traced, isolating literacy as an independent variable. In this conception, literacy affects cognitive processes by facilitating empathy, abstract context-free thought, rationality and detachment, and is exemplified by formal language and abstract codes (Street, 1984). In contrast, the ideological model refers to those theorists who concentrate on the social practices of reading and writing and recognise the culturally embedded nature of such practices. They stress the socialisation process in the construction of the meaning of literacy and are concerned with the general social institutions through which this process takes place and not simply the explicit educational ones (Street, 1984).

Literacy is not understood in this work as a toolkit of ideologically inert skills. Rather, inspired by the work of Street (1984), it refers to the social practices and conceptions that relate to reading and writing. In line with the critical theory perspective, these social practices and conceptions are acknowledged as being both historically and geographically specific and in a constant state of flux. As Street writes “what the particular practices and concepts of reading and writing are for a given society depends upon the context...they are already embedded in an ideology and cannot be isolated or treated as ‘neutral’ or merely ‘technical’” (1984, p. 1). In other words, the assumption that literacy means understanding grammar, or being able to read the works of Shakespeare, is an ideological stance in itself. As such, an important element of being literate is learning to be critical and expose the hegemonic ideological stances that are presented innocuously as common sense. One thinker and practitioner who has made a significant contribution to this understanding of literacy is Paulo Freire and the following section discusses his views on literacy, learners and democracy.

2.3.3 Literacy and Critical Consciousness

Freire's writing in *Education for Critical Consciousness* (2008) brings together the main themes that have been explored in this work; he writes about societies in transition within 'historical epochs' and emphasises the importance of enabling people to become critically conscious. In this way they can be empowered to acknowledge that they have a role to play in transition, as opposed to being idly swept along. At the outset of this work, the technological determinist stance - that assumes that technology determines how society changes - was discussed. It was jettisoned because in this understanding, technology "comes from *outside* society as an invasive element, without contact with the social in its development, yet it has enormous social consequences when it *impacts* on society" (Webster, 2006, p. 12). As such, this relegates the social, political and economic dimensions of influence to a subordinate position where they follow from technology. This perspective is disempowering and as Freire (2008) writes, while we cannot see ourselves as the proprietors of history, we must recognise that we are not simply *spectators* of the historical process.

In this work, the Digital Age can be considered an 'historical epoch' in that it is "characterized by a series of aspirations, concerns, and values in search of fulfillment; by ways of being and behaving; by more or less generalized attitudes" (Freire, 2008 p. 5). Reflecting on the discourses of the Digital Age, as discussed in the first half of this chapter, within policy, the aspirations and concerns of this particular "historical epoch" are focused on promoting the use of ICT in society so that countries can maintain their competitive advantage in global markets and to improve social inclusion. While the policy domain appears to be dominated by the "discourse of inevitability," invoking the insights of Freire and Gramsci highlights that people can be empowered to play a role in how society evolves. For Freire, the key role that people play in the process of change will ultimately determine their humanisation or dehumanisation within the transition. When people critically perceive

the themes of their times and their active role within society, “hopelessness begins to be replaced by hope” and society “reveals itself as something unfinished, not as something inexorably given ... a challenge rather than a hopeless limitation” (p. 10). In this way, it is important not just for the individual to be empowered and critically reflect on how the evolution of ICT is impacting on society, but also to realise that importance of their role in how this change happens.

Learning to be Literate

The insights of Freire (2008) are most relevant in this work in that they represent a call to action. In order to realise critical consciousness, there must be authentic action to transform the reality. Freire rejected a purely mechanistic literacy programme and focussed instead on helping adults read in relation to the awakening of their consciousness. He saw literacy education as an introduction to the democratisation of culture and viewed literacy as an act of creation. This links closely to Williams’ idea of culture - that it is the processes of ordinary hearts and minds and that what is integral to understanding culture is understanding the relationship between these two conceptions in that culture is both traditional *and* creative (1958). It is both old and new and so, for Freire, as the learner is “in the world” and engaging “in relations with the world” they are contributing to cultural reality and adding to the world. It is important for the learner to understand this in order for them to awaken their critical consciousness.

Freire understood literacy development as a creative process that involves the learner creating their own critical meanings. In this way it is empowering because discussions are “critical, stimulating, and highly motivating” (2008, p. 42). The aim of literacy teaching is therefore not to let techniques dominate. The educator’s role is to enter into dialogue with the learner rather than to simply offer him the instruments with which to read and write. In this way, the educator helps the student to discover him or herself as the maker of this

world of culture; that is to see their active role and opposed to idly accepting the prevailing ideology or “common sense”. As Freire writes “[T]his teaching cannot be done from the top down, but from the inside out” (2008, p. 43). As the learner becomes consciously and critically aware of his or her context and conditions, and is empowered to believe that he or she can work to change and improve these, learning becomes politicised. This does not represent a threat to democracy, rather Freire sees the awakening of this critical consciousness as being important for the successful functioning of democracy. It does represent a threat to the hegemony of the ruling class however.

Technology and Learning

While Freire’s work deals primarily with people in Brazil who work in agriculture, there are parallels between his discussion of using technology and the discussion in this work of the use of ICT in contemporary Irish education. He too is arguing for an education that makes use of technology in a way that empowers rather than disempowers the learners and the process of learning. He argues that it is not possible to rely solely on technological modernisation to help people. However, he is not, as this work is not, critical of technology *per se*, rather he emphasises the importance of remaining critical. He sees a contradiction in how technology can amplify the sphere of participation while simultaneously reducing one’s critical capacity through exaggerated specialisation and concludes that the way forward is not

defending outmoded and inadequate patterns of production, but by accepting reality and attempting to solve its problems objectively. The answer does not lie in rejection of the machine, but rather in the humanisation of man. (2008, p. 31).

With respect to using ICT in formal education in Ireland, this is a valuable insight and it is implicit in the perspective of this work. The final section within this discussion of literacy aims to build on Freire’s understanding of literacy as being crucial to fostering people’s

critical consciousness to a point where they become aware of their own historicity and can intervene in and change the world - which “arguably is the whole purpose of education to begin with” (Poore, 2011, p. 24).

2.3.4 Fostering Critical Literacy

That we need technological skills, to a greater or lesser extent, in the Digital Age is not disputed in this work. However, the level and range of skill necessary is the subject of debate. While technical skills are strongly promoted within policy, in academic literature there are many who assert an overemphasis on technological skill and who argue that the level of skill necessary has diminished over time as technologies become more and more user friendly (Selwyn, 2011; Livingstone, 2004). Also, while there is now some acknowledgement of children’s prior knowledge and understanding of ICT outside of school (DES, 2008a), this cannot be adequately understood as a decontextualised interaction with technology. Children’s use of ICT in their personal lives is an engagement with media not as technologies but as cultural forms (Buckingham, 2007). It is necessary to move forward with a vision and practice of literacy that takes account of the need to be critical and also children’s existing experiences of a wide variety of digital “texts”. In order to explore this perspective the following discussion makes reference to both Multiliteracies pedagogy and critical media literacy theory.

Multiliteracies

Many argue that literacy is now a multimedia literacy (Buckingham, 2003; Cope and Kalantzis, 2000). The term Multiliteracies was developed by a group of literacy theorists who were concerned about “the big picture; the changing word and the new demands being placed upon people as makers of meaning in changing workplaces, as citizens in changing public spaces and in the changing dimensions of our community lives – our lifeworlds” (Cope & Kalantzis, 2000, p. 4). The prefix of “multi” has a dual meaning referring to both

the multiple modes or channels of communication and also the many layers of cultural and linguistic diversity that influence how we interpret and communicate in the Digital Age.

Multimodality as an approach to understanding literacies expresses the complexity and interrelationship of many modes of meaning such as linguistic, visual, auditory, gestural and spatial modes. What is significant is that it connects the modes, emphasising the context and relationships between them. New textual practices such as text messages or web logs (blogs) create new standard terms that are widely understood by the users of these platforms. There are also new ways of interacting with and accessing information. Online information is “threaded” in complex webs that are navigated by the users, as opposed to the linear format seen in books. These changes necessitate a multimodal metalanguage that accounts for the dynamic styles of new media and their relation to different social and cultural processes (Cope and Kalantzis, 2000). Although multimodality presents significant difficulties with respect to forming a curriculum, Kress (2000) argues that the multimodality of texts is a reality in the global textual environment. This means that teaching literacy exclusively as a stable, autonomous system of linguistic conventions and rules is not meeting the needs of the information society that children are a part of (Kress, 2000).

Freire (2008) asserted that the approach to teaching literacy should not be a purely mechanistic literacy programme but should focus instead on helping learners read in relation to the awakening of their consciousness. With multiliteracies pedagogy, the aim is to enable students to participate fully in a dynamic, technologically and culturally diverse society. It creates “a different kind of pedagogy: one in which language and other modes of meaning are dynamic representational resources, constantly being remade by their users as they work to achieve their various cultural purposes” (Cope and Kalantzis, 2000, p. 5). One of the points of contestation that the multiliteracies pedagogy highlights, is that the texts that are valued in education are not representative of the texts and literacies that children encounter in their everyday lives. Some aspects of children’s worlds are systematically excluded.

This sets up an artificial dichotomy between what is educational and what is for leisure. It is also indicative of a widening gap between children's lives outside school and their lives in school (Buckingham, 2003; Willis, 1990). Buckingham (2003) claims that while the social and cultural experiences of children have evolved and been transformed over the past fifty years, schools have failed to keep pace with this change. The danger of this is that children perceive schooling as marginal to their identities and concerns, as merely a functional chore (Buckingham, 2003). While Buckingham states that there is not a total opposition between school and home, and acknowledges the school as an site of negotiation, he highlights that "there is now an extraordinary contrast between the high levels of activity and enthusiasm that characterize children's consumer cultures and the passivity that increasingly suffuses their schooling" (Buckingham, 2003, p. 33).

Luke (2000) argues that "the 'new' electronic writing is a different form of literacy – not an inferior or lesser form of some 'golden age' vision of literacy" (p. 85). Failure to consider and select carefully what counts as literature and worthy of study may result in the reproduction of dominant cultural codes. In not teaching about and through these new media, a significant number of gendered representations and stereotypes go unchallenged (Mills, 2009). Furthermore, in our increasingly diverse societies, where we claim to work towards inclusion and participation, it has to be acknowledged that a narrow fixed understanding of literacy is exclusive. Teaching about and through new media in order to enable children to become more critically literate is further explored in the following section on critical media literacy.

Critical Media Literacy

A "common sense" understanding of literacy that sees it simply as being able to read and write ignores the complex interrelationship between power and authority to access, interpret and produce new texts. Media theory has long sought to understand these relations

of power. Media literacy has been defined as the ability to access, analyse, evaluate and create messages in a variety of forms (Livingstone, 2004). Access is about more than simply owning or using a piece of hardware. As the CCME study (2001) showed, access does not determine use. What motivates children to use their access to various technologies such as books or computer games is largely dependent on social and cultural processes. The second element of media literacy is analysis. In order to engage with symbolic texts, one needs a range of analytic competencies and as the range of symbolic texts expands, so too does the range of capabilities needed to analyse them. Thirdly, the ability to evaluate content is of growing importance in the information age, as children's access to information is greater than ever before. The fourth element is content creation, and this is a key element both for media theorists and within this work. The production of symbolic texts is a core way of learning and developing literacy skills. That active engagement is a powerful pedagogic practice is a foundational point in asserting the importance of content creation.

Critical media education is both a critical and a creative enterprise. It seeks to provide young people with the critical resources to interpret, use and understand the media while also enabling them to create their own content and express themselves in a variety of forms. In Chapter One, there was a detailed discussion of the public sphere as an ideal for participation in society. In this discussion, it was suggested that in order for democracy to prosper, the protection of the public sphere is of critical importance. While ICT policies herald increased opportunities for inclusion and participation through the use of ICT, this can only happen at a meaningful level through up-skilling both the citizenry's technical skills and also their critical and creative skills. If the critical and creative abilities are foregrounded, people are positioned as critical participating citizens (Livingstone, 2004; Buckingham, 2007). It is this engagement with text whether "reading", "writing" or both - the process whereby a person is actively involved in interpreting a symbolically encoded text - that is understood in this work as referring to literacy. It is the notion of literacy that

is asserted as being paramount in ensuring participation in the public sphere as citizens.

Democracy and democratic education according to Freire are founded on faith in people and “the belief that they not only can but should discuss the problems of their country, their continent and of their world” (2008, p. 32). Essentially, while we emphasise the skills both technical and literary that children need to access information, we must also think of how we want them to use these skills, for these skills are only the beginning. In doing so, we can move our aspirations for education away from repeating irrelevant principles to promoting “[A]n education of ‘I wonder’ instead of merely ‘I do’ (Freire, 2008, p. 32).

In Buckingham’s (2003) account of media literacy he argues that it seeks to start from what children already know – their existing tastes and pleasures – and in doing so aims to develop a

more reflexive style of teaching and learning, in which students can reflect on their own activity both as ‘readers’ and as ‘writers’ of media texts, and understand the broader social and economic factors that are in play. Critical analysis is seen here as a process of dialogue, rather than a matter of arriving at an agreed or predetermined position.(Buckingham, 2003, p. 14)

Not only does this represent a challenge to how children learn but it also represents a basis for “a more cohesive and inclusive conception of what *counts* as learning” (Buckingham, 2003, p. 14) (*italics in original*). Buckingham claims that new technologies can challenge conventional distinctions between critical analysis and creative production and thus may create opportunities for different and much more “playful” forms of pedagogy (2003, p. 17).

Both the multiliteracies pedagogy and critical media literacy represent an acknowledgement of the texts that children encounter and enjoy in the process of their everyday lives as texts that can be used to foster critical literacy. It represents what Freire referred to as education from the inside out. In using these texts, the aim is not to inoculate children against their pleasures but it is to encourage and enable them to become critically

engaged with their culture and reflective about it. It also enables them to better understand the broader networks of social, economic and institutional power because, as Buckingham asserts, “it is vital that young people should understand the complex and sometimes contradictory ways in which these operate” (2003, p34). This kind of understanding is central to any contemporary definition of literacy. As Jewett writes, “[B]eing critical means studying critical issues” (2007, p. 159).

2.3.5 Literacy in Irish Education

Literacy as Legitimation

How literacy is defined has implications for the framing of the debate, the research agenda and the policy initiatives (Livingstone, 2004). However, in recent decades the term has commonly been added to other terms such as “economic literacy,” “advertising literacy,” or “environmental literacy.” Buckingham (2003) describes this as an effort to draw an “analogy between the competencies which apply in relatively new or controversial or low-status areas ... and those which apply in the established, uncontroversial, high status area of reading and writing” (p. 36). In this way, using the term literacy in some way legitimates the other concepts. The term literacy has also been connected to the idea of media literacy. However, when used in this way, it is used to imply more than acquiring technical skills. As Livingstone (2003, p. 17) writes:

Evidently there is not only skill involved but also an interpretive relationship with a complex, symbolically encoded text as mediated by a particular technology. It is this engagement with text that distinguishes information and communication technologies from other technologies – which is why we call a competent user of the washing machine or car ‘skilled’ but not ‘literate.’”

In essence, literacy can be used to legitimate new areas or it can be used to imply a level of competence that exceeds technical skills. Within the discourses of the Digital Age and

education, the term literacy has been added to various technical terms to refer to new literacies such as ICT literacy, digital literacy and computer literacy and this prompts the questions of how ICT literacy is understood within Irish education. Is it about technical skill or something more?

The discussion paper on ICT in education (NCCA, 2004) outlined existing areas of research in relation to ICT in education under the headings of digital literacy, information literacy and ICT literacy. The discussion culminated with the NCCA vision for *ICT literacy*:

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

This vision for ICT literacy is also to the fore the ICT Framework (2007). The word literacy is used only once within the Framework but it is clear that the approach to using ICT that is being advocated is built on a foundation that emphasises both the interaction between the user and ICT and also the interpretive, critical and creative nature of this interaction. While combining the term ICT with the term literacy could be understood as legitimating ICT in line with the aforementioned Buckingham citation, the vision of ICT literacy put forward by the NCCA would appear to represent a more substantial claim. It is posited here that this vision of ICT literacy extends far beyond the use of technology, encompassing much broader social aspects of education and learning. In essence it represents a relatively comprehensive description of what constitutes being *literate*, as opposed to *ICT literate* in particular, in the Digital Age.

ICT Literacy and Traditional Literacy

While the NCCA definition of ICT literacy is comprehensive and ambitious, there is no apparent link between it and what constitutes literacy within the English curriculum. However, if how literacy is defined has implications for the framing of the debate, the research agenda and the policy initiatives (Livingstone, 2004) what does it mean for the framing of the debate if literacy is consistently not defined and discussed? For example, the *Revised Curriculum* (1999) does not clearly discuss or define literacy. It is featured only in the glossaries where it is defined as “the ability to read and write” in the *English Curriculum* (1999, p. 70) and as “the level of reading and writing ability sufficient for everyday life but not necessarily for completely autonomous activity” in the accompanying *Teacher Guidelines for English* (1999, p. 103). The phrase “literacy skills” features only briefly in relation to the learning of language. While the meaning may be considered implicit in the documents, lack of a clear definition and understanding of such a contested concept is considered in this work to be a significant oversight.

In 2010, the Department of Education and Skills published *A Draft Plan for improving Literacy and Numeracy in Schools*. In this draft plan, the concept of literacy is taken for granted to the point of requiring no explicit definition or discussion. The only explanation of the term is included as a footnote:

Literacy conventionally refers to reading, writing, speaking, viewing, and listening effectively in a range of contexts. In the 21st century, the definition of literacy has expanded to refer to a flexible, sustainable mastery of a set of capabilities in the use and production of traditional texts and new communications technologies using spoken language, print and multimedia. In this plan, literacy refers to the development of these capabilities in the first language of the school (L1).

While new communications technologies are mentioned, there is little evidence of how they are to be developed within the plan for literacy and there is no mention of ICT or new skills

that need to be developed or how they could be developed. The most curious aspect of this plan, however, is that it appears to be focusing on a very narrow understanding of literacy that refers only to the language skills of the first language of a school (L1). While this represents a lack of recognition of the multiple languages and intercultural nature of Irish schools, it also implies that literacy is about “English” and about safeguarding the “core skills” of literacy “above all other aspects of the curriculum” (p. 25). The paradox of this is that while other subject areas strive to give depth and context to their subject area by invoking the term literacy (Buckingham, 2003), where literacy itself is the focus, it is presented as a set of basic core skills.

It is not within the scope of this work to critique the ‘Draft Plan’ in any meaningful way and more comprehensive responses to this have been made available by institutions such as the NCCA and various colleges of education. However, given the theoretical perspective of this work, that is grounded in critical theory, it is not possible to conceive of literacy as a set of core skills that takes no account of the broader social, cultural and political influences on literacy. It is asserted that any plan to improve literacy, especially in a technologically advanced and intercultural society, should take more cognisance of this.

PISA Results for Print and Digital Reading Literacy

While literacy and ICT literacy remain within the policy domain as separate areas, within international testing, digital reading literacy has recently been included as a subset of standard literacy tests. The Program for International Student Assessment (PISA) is a system of international assessments that focuses on 15-year-olds' capabilities in reading literacy, mathematics literacy, and science literacy. It is coordinated by the Organization for Economic Cooperation and Development (OECD), and allows countries to compare their progress in certain areas to other countries' progress. The most recent test administration was in 2009 and focused on reading literacy - defined as “understanding, using, reflecting

on and engaging with written texts, in order to achieve one's goals, to develop one's knowledge and potential, and to participate in society" (OECD, 2009, p. 23). Within this test, there was also a subset that tested reading literacy with computer-based tasks referred to as digital reading literacy. Ireland's results in relation to both of these testing areas provide interesting results.

Ireland ranked higher (8th of 19 countries) on digital reading literacy than on the print reading assessment (11th of 19 countries). However, while the digital reading results appeared to be good, it was noted that high achieving children scored similarly to how they did on the print test which indicates that "higher-achievers in Ireland are underperforming on digital reading" (Cosgrove, et al, 2011, p. 5), while it was the lower achieving students, particularly those in Level 2 or below, whose strong performance led to Ireland's high average score. The PISA findings highlight two key points for educators – that there is a significant link between offline and online reading skills, and also that there appears to be little common ground between home use of ICT and school use.

The strong correlation between print literacy and digital reading literacy suggests that some of the skills required to read and respond to digital texts are similar to those required to read traditional print texts. Cosgrove et al (2011) assert that the strong correlation could indicate that traditional print reading skills may be more important than ever before. They also suggest that the converse may be true; that students who are not competent in traditional literacy skills may not benefit from the new literacies. They suggest that the proposals within the Draft Plan (2010) to focus on raising levels of performance on traditional literacy "could also secure a stronger performance in digital literacy" (Cosgrove et al, 2011, p. 11-12) in the future. However, recent research would suggest that this approach could exacerbate digital divides. According to Dwyer (2010), struggling readers in disadvantaged communities are more likely to be engaged in lower-order skills with computers - such as drill-and-practice software - rather than creative and exploratory work.

This is because there is concern that they need to develop the core skills before using ICT or that they will not be able to work effectively on higher-order thinking exercises. However, as Dwyer concludes, this means that children in disadvantaged areas are being further disadvantaged at the level of ICT use. In not supporting these children in developing effective online competencies and strategies there is the possibility of fostering a digitally determined ‘Matthew Effect’⁴. Thus, one element in addressing digital divides has to do with the expectations that we have for the children in our classes. Furthermore, she found that in challenging struggling readers at a higher level using both online and offline strategies their literacy levels improved. In relation to the PISA results, it also has to be clarified that it was the children at the lower levels in Ireland who were performing better on the test than their counterparts in other countries and also significantly better than they performed themselves on the general reading literacy test. This would suggest that their acquisition of ICT literacy could be used and developed in order to help their print literacy. Essentially, we have a situation where children perform poorly in relation to the literacy skills explicitly taught in schools and perform well in an area that is not taught in schools.

Within this section on literacy, there is a call for a more critical engagement with literacy to be fostered within schools. Because the digital reading assessment was conducted on computers it gave some indication of students’ navigation behaviour online. Those who perform at the highest level on the digital reading assessment are those who are able to target the pages that are most useful and relevant. While Ireland’s average for digital reading was considered high relative to other countries, it was also mentioned above that the high-achievers in Ireland underachieved on the test. This could be explained by the

⁴ The ‘Matthew Effect’ was a term adopted by Keith Stanovich (1986) to describe a phenomenon that has been observed in research on how new readers acquire the skills to read: early success in acquiring reading skills usually leads to later successes in reading while children who fall behind in reading, read less, increasing the gap between them and their peers.

evidence that while students in Ireland report similar weekly levels of chatting online as their counterparts in other OECD countries, they reported less frequent engagement in activities such as reading online news, using online reference materials and searching online for information. They also reported much lower use of computers for school-related activities. The table below shows how their online activities relating to school compare to OECD averages.

Table 2.3.5 Percentages of students engaged in school-related computer activities at home at least weekly-Ireland and OECD average (2009)

Activity	Ireland	OECD Average
Browse the internet for school work	28.8	45.6
Doing homework on the computer	25.3	49.8
Use of e-mail for communication with teachers	5.4	13.9
Check school website for announcements	5.8	20.9
Download, upload or browse materials from school website	8.3	23.0

In this way, it is clear that home use of ICT does not easily transfer to school use. This highlights the difficulty with the recent assertion by that we “need to find ways of incorporating these new skills and experiences into the formal learning environment” (DES, 2008b, p.1). Furthermore, it appears that what we are doing in schools may not even be contributing to children’s digital literacy skills. It was concluded from the general OECD findings that high levels of computer use in school are not associated with high levels of performance on digital literacy (Cosgrove et al, 2011).

While the PISA results are certainly encouraging, they can be understood as a foundation that education can build upon. They indicate a level of ability that has not necessarily been taught in school, but that could be developed and built upon in schools. It is also crucial to state that the PISA results related to “reading literacy” and “digital reading literacy” and not to a general or critical digital literacy. There is, for example, no reference

to abilities to create original content and this is seen as being fundamental to developing literacy in the Digital Age.

Meaningful use of the Internet

It was established that digital literacy is now seen as being a fundamental part of social inclusion but that with children and young people's use, it is not a binary divide between users and non-users, rather there are gradations of use (Livingstone and Helsper, 2007). It is important when considering these literacy skills to pay some attention to both how ICT is used by low users as compared to high users thus beginning to explain why differences in internet use matter, contributing to inclusion and exclusion. We need to move towards understanding the quality of time spent with media as opposed to simply the quantity. For digital use to contribute to digital literacy there must be "meaningful use" (Selwyn, 2004, p. 349). Thus, while the PISA results indicate that Irish teenagers are comparatively better than average, this does not indicate that they have a high level of digital literacy competence. For example, the proficiency levels of digital reading only include "critically evaluating information from several web-based sources that they have generated themselves" at the highest level (5). This table is included in Appendix 1.

In order to explore the nature of young people's use of the Internet, Livingstone & Helsper (2007) through detailed research found that there is a significant pattern to how children and young people use the Internet. They claim that going online is a staged process (2007, p. 684).

Step 1: Information seeking (basic users)

Step 2: Games and Email (moderate users)

Step 3: Instant messaging and downloading music (broad users)

Step 4: wide range of interactive and creative uses (all-rounders)

They assert that the “consistency in this pattern is intriguing” (2007, p. 684) because if one knows that a child does four things on the Internet, one can be sure that this will include information-seeking, games and email. Similarly, website creation is likely to only be the domain of high-users who undertake all the other activities as well. It is also important to note that Livingstone and Helsper highlight that the benefits of using the Internet have not yet been resolved, in spite of much public concern over differences in access. Their research does however show that the more expert users of the Internet make broader use of the Internet. Not only do skilled users take up more opportunities than unskilled users, but the youngest experts take up more opportunities than the oldest group of beginners. Their research still shows that boys, older children, and middle class children all benefit from more and better access to the Internet.

2.3.6 Literacy and Action

What the multiliteracies approach to literacy asserts is the complex multimodal environment in which we communicate in the Digital Age. The communications environment that children are experiencing both in school, and at home, and in the future involves diverse forms of visual, audio-visual and digital literacy. In order to prepare and equip them in their lives now as children, and in the future as workers and citizens, a more comprehensive view of what it means to be literate is a matter of absolute urgency. The discussion of media literacy emphasises the importance of starting from children’s existing tastes and pleasures. However, when policies recommend incorporating children’s experiences of technology outside of school, there is the risk that they aim to appropriate and control rather than engage with and critique extra-curricular cultures (Facer et al, 2001). In order for children’s existing pleasures and capabilities to be used in formal education, as Buckingham (2003) wrote, there will have to be some movement in what “counts” as learning.

This discussion of literacy has emphasised the need to remain conscious of the ideological elements of discourse and power that help shape how meaning is constructed and shared within society. This politicises the notion of literacy and indicates that the study of literacy should address questions of the economic and institutional contexts of communication (Luke, 2000). As Buckingham (2003) states, this approach also emphasises that acquiring literacy “makes possible particular forms of social action. It enables people to *do things*” (2003, p. 39 italics in original). Literacy can therefore be embraced as a way to empower children and young people to be more engaged, critical and active citizens in the Digital Age.

2.4 Conclusions of Chapters One and Two

The aim of this work is to explore the claim that “learning is changing” (DES, 2008a, p. 1). There are many ways to explore this idea and this work represents one particular approach to exploring this question that is grounded in the assertion that the “relationship between education and society is dynamic and interactive” and that education “not only reflects society but is an influence in shaping its development” (Revised Curriculum Introduction, 1999, p. 6). Guided by this principle, and grounded in a cultural and critical theory perspective, it was necessary before focusing on learning within schools to consider the broader contexts of the society that education is now a part of – the Digital Age – and also to consider children’s experiences and media culture outside of school. The exploration then focused on ICT policy and how ICTs are envisioned within society and education. This discussion highlighted the debates around digital divides and social exclusion and how these have become conflated with policy aspirations with respect to ICTs in education, centering on ensuring that students “be equipped for full participation in the information society before they leave school” (DES, 2001, p.2)

While the research topic is framed as a question, it is not the purpose of this work to provide neat conclusions and resolutions. As Amin and Thrift (2005) asserted, “[T]heory is about building better questions which can reveal aspects of the world that have hitherto been neglected or unimagined “ (p. 222). The review of literature, while detailed and informative, also points to a number of areas where there is scope for further exploration. In what ways does the Digital Age impact on formal education? What do we know about Irish children’s existing relationships with ICT? How is ICT in education viewed by the people who work in education? And has what it means to be literate changed in the twenty-first century? Given the partnership approach that is characteristic of education reform in Ireland, there is now a plurality of perspectives on these questions. Within the chorus of opinion weighing in on educational change, there is also a growing acknowledgment of the need to listen to, and validate, children’s perspectives on matters that affect them. In acknowledgement of these factors, the empirical work explores these questions with both children and a range of stakeholders in the education process. In this way, the complexity of differing views can help deepen the consideration of how learning is changing in the Digital Age.

CHAPTER 3 – RESEARCH METHODOLOGY

3.1 Introduction

The overall aim of this work is to explore if learning is changing in the Digital Age. Chapters One and Two illuminated the changes in society relating to theories of the Digital Age, children's media culture, ICT policy and literacy. The empirical section of this work aims to explore, challenge, support and extend these theories. Chapter Three outlines the theoretical framework used to approach the research problem, provides a detailed account of how the empirical work was carried out and also describes the data collection and analysis procedures.

3.2 The Theoretical Framework

According to Creswell (2003), three elements make up the theoretical framework for approaching a research problem. These three elements influence each other and must be considered in relation to one another. The three elements are: the philosophical assumptions; the strategies of inquiry to be used in the project; and detailed procedures of data collection, analysis, and writing; also known as the methods of inquiry.

The philosophical assumptions of this work are outlined clearly in the first chapters and used as a lens through which to explore the topics that were discussed. Influenced by the work of both cultural theorists Stuart Hall and Raymond Williams and also the critical theory of Antonio Gramsci, a theoretical lens was developed that acknowledged the relations of power in the construction of knowledge. The work of Williams highlighted the importance of understanding both the power of culture in shaping how we view our world and understand ourselves, and also how culture is dynamic and in a constant state of flux. The concept of hegemony and the ideological power of common sense as put forward by Gramsci were illuminating, while Hall's extension of this concept showed the important

role that the mass communications industry play in shaping conceptions of what is known in the world. This lens was applied throughout the first two chapters, underpinning the exploration of three theories of the Digital Age and also exploring and highlighted the pedagogical power of children's media culture. Most notably Gramsci's concepts of hegemony and common sense challenged the discourses that dominate ICT education policy as was shown in Chapter Two.

In Chapter Three, the lens is again significant in choosing how to explore the questions raised in critical discussion in the first two chapters through empirical work. In Chapter One, it was asserted that meaning is constructed in a subjective way through one's interaction with the world and others, and through the historical and cultural norms that operate in people's lives. These meanings are varied and multiple and so the researcher must look for the complexity of views rather than trying to narrow meanings into predefined categories. In order to acknowledge this in the empirical work, a fundamental aspect to this approach is the effort to understand and interpret meaning from people's own reflections on their worlds, in their own words. Knowledge is understood as being "perspectival" and human reality is understood as "conversation and action, where knowledge becomes the ability to perform effective actions" (Kvale, 1996, p 42). In particular, the philosophical assumptions of this work allow children's own constructions of their experiences with media to be foregrounded. Details of how the cultural and critical theory lens is applied throughout the discussion of findings is presented at the end of this chapter.

The second element of the theoretical framework is the strategy of inquiry and in order to select the most suitable strategy it is necessary, first, to define the research problem and research objectives. With a clear statement of the research question, a suitable strategy of inquiry can be selected.

3.3. Defining the Research Questions

The research methodology can be understood as consisting of a study within a study. The overall research question is to explore if learning is changing in the Digital Age. This has been explored through literature in the first two chapters relating to theories of the Digital Age, children's media culture, education policy and ICT, and literacy. In order to explore these themes further, a series of interviews with experts and stakeholders in education were carried out. While the interviews with experts and stakeholders are illuminating, with respect to understanding children's own experiences of ICT, the experts in this area were considered to be the children themselves. For this reason, a series of focus groups with children were conducted. The following discussion outlines the research questions and clarifies the approach taken.

3.3.1 Exploring Perspectives on Education and the Digital Age

Defining the Overall Research Problem

As the vision statements from ICT policies highlighted, visions of ICT in education tend to be dominated by the themes of inevitable change, of national economic importance, of participation and of the logic of the market. To what extent is this reflected in the perspectives of various stakeholders in education? The broad aim of this stage is to explore the nuances of visions of people with different vested interests in education and ICT. The analysis of these interviews exemplifies the plurality of opinions and explores how these relate to the literature.

The Research Objectives

Defining the research question and dividing it into specific research objectives produces a clearer overview of the area to be explored. Each research objective focuses on a particular aspect of the broad aim and rationales for each objective are given to further clarify the research process. The research objectives are illustrated in figure 3.3.1.

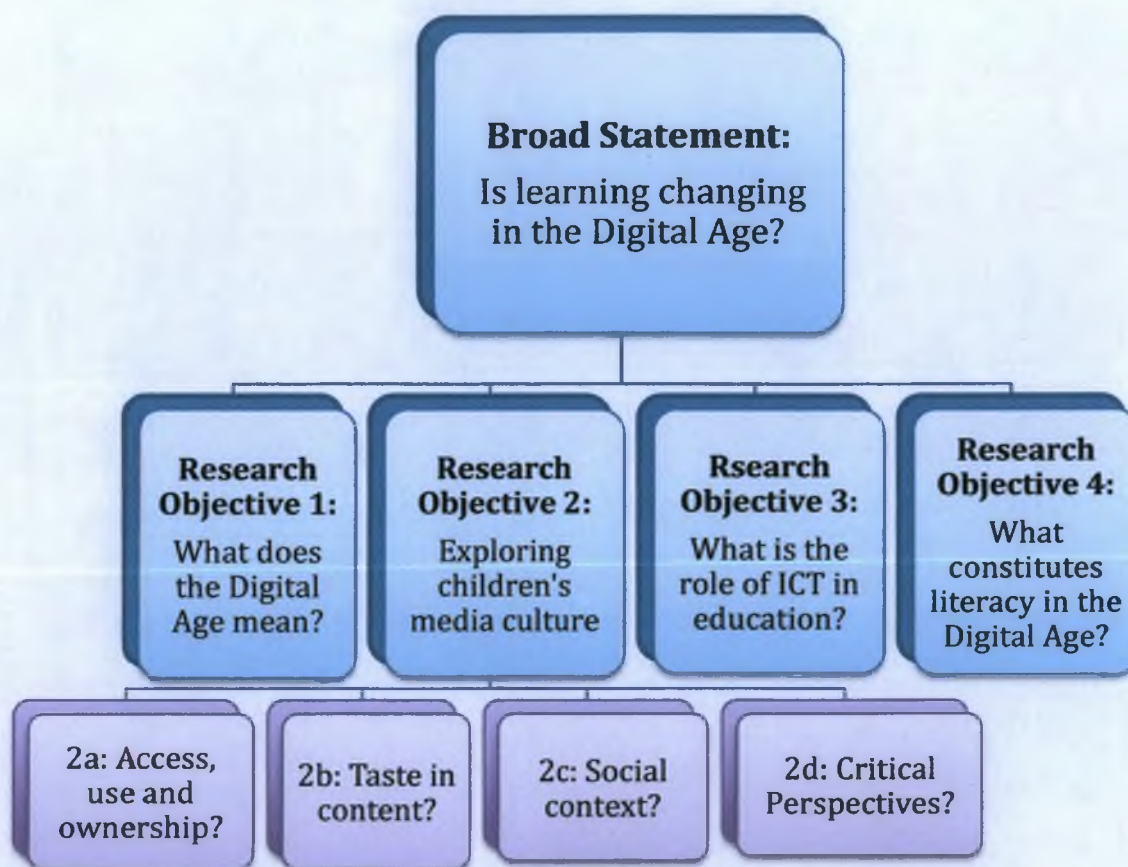


Fig 3.3.1 – Broad Statement and Research Objectives

The Digital Age: The concept of the Digital Age is frequently used as justification for investment and promotion of ICT in schools. However, as the literature review established, this is a contested concept. The first objective in the interview phase is to explore with people their own understanding of what this means for society and in the context of education.

Children's Media Culture: Children are engaging with ICT outside of school. This is acknowledged in policy (2008a), along with efforts to incorporate children's informal use of ICT into schools. In order to do this, it is necessary to have a contextual understanding of children's interaction with ICT outside of school. This is explored with the children as a

broad research question and the details of this are given below. It is also part of the overall exploration with the stakeholders and experts where they are asked to consider the impact of children's engagement with media outside of school on their time in the classroom and their learning in general.

ICT in schools: Various stakeholders understand the potential opportunities and challenges of using ICT in schools in different ways. How ICT should be used in schools and what core skills should be emphasized are discussed with the experts and stakeholders.

Being literate: The discussion of how the information and communication environment is changing in the Digital Age prompts the idea that what it means to be literate in the Digital Age is also changing. This discussion of literacy links concerns about education and society and the insights of stakeholders can illuminate the vision of ICT in education in the future.

3.3.2 Research Objective 2 – Exploring Children's Media Culture

Defining the Research Problem

The Revised Curriculum (1999) places the child firmly at the centre of the vision for primary school education. It recognises the “integrity of the child's life as a child” and also acknowledges that “children live in and are a part of society, and that their personal development is deeply affected by their relationships in the home and with other people in society” (1999, p. 6). With this in mind, the aim of this section is to explore with children their lives as children living in a digital society. The focus of the exploration is children's media culture as this is seen as playing a fundamental role in children's development and learning within the Digital Age.

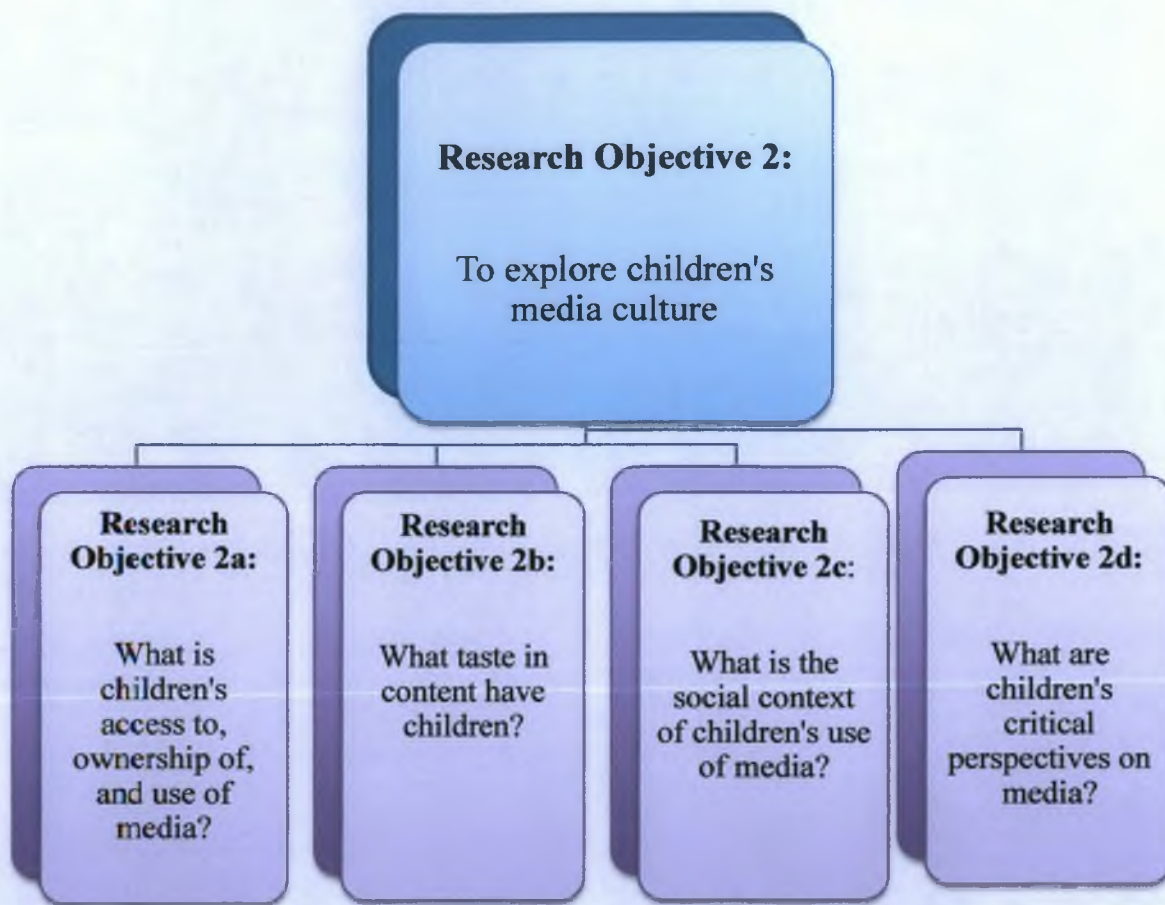


Fig 3.3.2 Research Objective 2

The broad aim of the research objective is to explore children's media culture with children.

This question is explored through four research objectives. These are outlined below.

The Research Objectives

Access, ownership and use: The objective of this element is to find out what media children have access to, own and use. This objective also serves to illustrate the concept of the media environment whereby children can have and enjoy any combination of a number of media technologies. It is built on a premise that the digital generation is not a homogeneous group and aims to support this with evidence.

Taste in content: The objective of these questions is to find out about children's taste in different media technologies and content. An expression of preference or disdain can be used in culture to assert both age and gender identities and this is explored through the data

generated under this section. Also, access to technology does not necessarily mean that a child will use the technology and exploring expressions of taste provides insight into what motivates children's adoption of certain media technologies and products.

Social context: This objective is to allow children to talk about the social contexts of their media use. These include the context of the home, friendships, the school and children using media alone. This illustrates how ICT is embedded in children's lives and culture.

Critical Perspectives: The objective is to explore what critical views children hold on the media. Questions relating to what they think are negative or positive about various media give a valuable insight into children's perspectives on the media that are present in their lives.

The Media Categories

The first three objectives were explored with respect to children's media environments. For purposes of clarity in the discussion, the various forms of media were grouped together into media categories. The six categories of media discussed were:

1. television & DVDs;
2. computers and the Internet;
3. phones, cameras and video cameras;
4. games consoles and portable games devices;
5. books, magazines, comics and newspapers;
6. music and the radio.

In setting out to explore children's media culture, the aim was to form a picture of the mediated culture that children are growing up in and to develop a comprehensive perspective that takes accounts of the children's experiences. Essentially, the aim was not to explore individual experiences of living in an information age, but rather the collective experiences and meanings. These "ordinary processes of human hearts and human minds"

are what Williams (1958, p. 32) referred to as *culture* and so in exploring, recording and documenting children's own perspectives on their use and enjoyment of media, an understanding of this particular culture, children's media culture, can evolve. In order to facilitate this sharing of information, it was necessary to use a strategy of inquiry that would be conducive to the process. Focus groups were deemed to be the most appropriate and this is discussed in further detail below.

3.4 The Strategies of Inquiry

This work is based on the philosophical assumption that individuals seek to understand the world in which they live and that in their interactions with others, both directly and indirectly, they construct meaning. This construction of meaning is done in a subjective way through their interaction with the world and others and through the historical and cultural norms that operate in their lives. These meanings are varied and multiple and yield a complexity of views and experiences. Both the children's views of their media-related leisure pursuits and the adults' perspectives on education in light of significant social changes are considered to be social constructions. In order to explore this, a strategy of inquiry that acknowledges this complexity, that affords the richness of personal experiences and accounts of these experiences to be foregrounded, is necessary. The strategy of inquiry most suited to this work is a qualitative, exploratory strategy.

3.4.1 Rationale for Choosing Qualitative Methods

Qualitative methods of inquiry were chosen over quantitative for a number of reasons. Qualitative methods of research emphasise the holistic understanding of the views of people. The researcher endeavours "to enter the hearts and minds of those they are researching, to develop an empathy of their experiences and feelings' (Malhotra and Birks, 2000, p. 158). In this study, it is important to the integrity of the study that children are

allowed the space to describe and discuss their own views and experiences and qualitative methods facilitate this openness. The qualitative process also allows the stakeholders to express their views and opinions.

The methods of the natural sciences find clarity and credibility in the fact that they are governed by law-like regularities. However, in the human sciences the social researcher is concerned with exploring and understanding the social world using both the participant's *and* the researchers understanding. The findings are invariably influenced by the researcher's own perspectives and general familiarity with the research domain (Snape and Spencer, 2003). Therefore, the research cannot be claimed to be transparent of her assumptions.

This empirical work can be understood as a form of social research and as such it involves an element of the unknown (Ritchie and Lewis, 2003). This allows for unanticipated issues to be explored if they arise. The three aspects of theory, data and design are not in a linear sequence; rather they influence and are influenced by each other. Design in qualitative research therefore is not "a discrete stage that is concluded early in the life of a study: it is a continuing process, which calls for constant review of decisions and approaches" (Ritchie and Lewis, 2003, p. 45). A thorough discussion of the process of implementing the empirical phase of this work and the various events that transpired and decisions that were made in relation to unanticipated issues will be included below.

3.4.2 Rationale for Choosing Exploratory Methods

Exploratory research is used in projects where one is trying to seek new insights, ask questions and generate ideas and hypotheses for future research (Robson, 2002). Exploratory research was chosen over conclusive research as it is primarily about providing insights into, and comprehension of, the research problem. It is used to understand. The approach is characterised by flexibility and versatility, and how it facilitates a design that

may evolve through and with the research. In working with children, it is important to have flexibility and versatility in the methods so that one can be responsive to the participants. Given the diverse backgrounds of the stakeholders and experts to be interviewed, a flexible strategy of inquiry was also considered necessary.

3.5 The Methods of Inquiry

Two methods of inquiry are to be used in this work. The first, focus groups, is used with children while interviews were used with the stakeholders. The researcher asserts that doing research with children and adults are different processes and require somewhat different deliberation and detail within the discussion.

3.5.1 Focus Groups

Rationale

Focus Groups with the children were chosen as the research tool for two reasons. The first is that they were deemed the most appropriate for use with children. They create a safe peer environment and replicate the type of small group settings that children are familiar with in their classroom work (Mauthner, 1987). The peer support helps to redress the power balance between the participants and the researcher. Secondly, with the focus being on culture, the aim was not to find individual opinions, rather it was the discussion and collective wisdom that was produced as children voiced their opinions, views and ideas and agreed and disagreed with each other. Hill et al (1996) argue that children may be encouraged to give their opinions when they hear others and their memories may also be jogged by the contributions of others. The group context was therefore deemed to be a much richer source of data as this provides the social context within which the phenomenon is experienced (Lewis, 2003). Levine and Zimmerman (1996) also suggest that the focus group allows children to be the experts, so instead of being questioned by an adult they are

sharing their experiences with a group of peers.

Recruiting the Sample

The sampling technique used for the focus groups was convenience sampling (Malhotra and Birks, 2000). The sample population was children from the junior school where the researcher works and the corresponding senior school. The sample was criterion-based or purposive—that is “members of a sample are chosen with a ‘purpose’ to represent a location or type in relation to key criterion” (Ritchie, Lewis and Elam, 2003, p. 79). Although criterion based sampling involves quite deliberate choices on the part of the researcher, this does not suggest that there was any bias in the choices made. The sample requires clear objectivity so that it will stand up to independent scrutiny. The children’s sample included both boys and girls, of two distinct age groups and in some cases different ethnic backgrounds. The diversity was necessary for two reasons. Firstly, it optimised the opportunities for identifying the full range of factors or features associated with the subject matter allowing for exploration of gender- and age-related patterns. Secondly, it allowed for some investigation of interdependency between varying characteristics (Ritchie, Lewis and Elam, 2003). Due to the convenience sampling process and the focus on doing in-depth study with a small population, there was not diversity with regard to socioeconomic status (SES) of the people involved in the empirical work.

Each focus group was made up of six children. This allowed for a variety of views and conversation. Consideration was also given to the fact that a child may be absent on the day of the focus group. This was the case in two of the senior focus groups where one had five participants and one had four. With regard to the choice of specific children for the groups, this was done not by the researcher but instead by the respective class teachers who along with the Boards of Management and principals of the schools were gatekeepers.

Access/Gate-keepers

In order to access the children, the Boards of Management were contacted in writing with the permission of the respective principals of both schools. They were then given an application pack for the Board of Management including the details of the study and proposed research methods (Appendix 3a). Special attention was drawn to ethical issues; samples of the notes that would be given to teachers, parents and the children's informed consent forms were also included.

Subsequent to B.O.M. approval, teachers were then approached and asked to choose six children who would like to participate in a focus group. Three teachers in each school were given information on the proposed study and asked to choose six children for focus groups. Teachers were given individual notes to ensure that one teacher would choose six girls, another six boys and another teacher three boys and three girls. The only instructions for the teachers with regard to selecting children was that they would choose children they thought would enjoy a focus group and also that they choose children than would get on relatively well with each other so that the children would feel comfortable and also given the ethnic diversity in the schools that this would be represented in the children chosen.

The researcher then met with the children, explained what a focus group is, described the kinds of topics that would be discussed, spoke about anonymity and confidentiality, about the focus groups being recorded and also that the children could withdraw at any point in the process. The children were allowed to ask any questions they had. The aim of this meeting was that the children would feel more comfortable when it came to the focus groups. The researcher felt that the children should have a chance to meet with the researcher and hear about the research and decide if they wished to participate. When this was complete, the children were asked if they would still like to participate and if so, they could take a note to give to their parents (Appendix 3b).

The note for the parents explained the purpose of the study, its aims and procedures,

about confidentiality and anonymity and the recording of the focus groups. The note contained a consent form for the parents and also a sample of the informed consent form that the children would sign prior to the focus group. All 36 children who met with the researcher said they would like to participate and only one child decided on the day not to participate.

Consent/Assent

Consent refers to the process where either the child or an adult acting on their behalf agrees to participate in the process. Assent refers to the child's agreement to participate in the process when another has given consent. In research with adults, these two processes are conflated, but the process with children highlights that there are two distinct stages. In order for there to be informed consent, the participant must have information about the opportunity to participate, be aware that they can withdraw from the activity, know what their role will be and know what the intended outcomes of the research are (Lewis, 2002). Before beginning the focus group the children signed an informed consent form (Appendix 2d). Also, the researcher monitored children's participation and body language throughout the focus groups for any signs of discomfort. Children were informed at every stage in the process of their right to withdraw from the study.

Confidentiality/Anonymity

Confidentiality and disclosure are of particular relevance when doing qualitative research with children. Although the importance of confidentiality and anonymity is stressed in the literature (Kvale, 1996), "[T]here appears to be an emerging consensus amongst researchers that complete confidentiality can never be guaranteed to child research subjects" (Mahon, et al, 1996, p. 151). If the child reveals information that the interviewer feels it is in the child's best interest to pass on, then the confidentiality may be breached. In agreement with the principals and BOM's, children were given provisional guarantees of

confidentiality and the proviso was that if issues relating to child protection were disclosed the researcher would have a duty to pass on the information. It was agreed that this would be done in consultation with the child. In conducting the fieldwork, no issues of a sensitive nature arose. The researcher guaranteed anonymity in any written documentation resulting from the research. This meant that comments or views were not attributed in a way that they could be traced back to the individual. Also if any data could be traced back to an individual, it would not be used.

In order to empower the children in the process and also highlight the fact that they would be anonymous, each child was allowed to choose their own “code name”. They were given a prefix relating to their gender and whether they were junior or senior and then they were allowed to choose any three numbers, i.e. Senior Girl 001. The children were provided with markers, stickers and name labels that they could put their code name on and decorate as they pleased.

Working with Children

“It is important to understand the world of children through their own eyes rather than the lens of the adult” (Cohen et al, 2007, p. 374). Children differ from adults in cognitive and linguistic development. They also have a shorter attention, concentration span and ability to recall. What they consider to be of importance may be dramatically different to what an adult or interviewer may. Some researchers argue that children should be considered as a “minority group” in that they lack power and control over their own lives (Mayall, 1999; Hood et al, 1996). Acknowledging children as a social group also means acknowledging that their needs may not always be harmonious with other groups in society and though this may generate conflict, this conflict should be recognised as opposed to simply being subordinated. *This is what giving children a voice means.* The focus groups were designed to allow the children to express their opinions and experiences in their own

words. The researcher explained at the beginning that in this context she was not a teacher and would not be “teaching” them. She would, for the most part, be listening and asking some questions.

Potential Effects

It was acknowledged that participation in the focus group could cause distress for the children involved. Although in this research children were not discussing very personal issues and situations, careful consideration was given to how the focus group process would end and what closure techniques would be appropriate. When the discussion had ended children were given a fact sheet relating to their taste in media to fill in (Appendix 2e). This sheet was fun and as the children worked on it small treats were provided so the atmosphere was one of relaxation and conversation. Again, gel pens, markers and stickers were provided.

Researcher as Expert

A key issue for the researcher in working with children is the extent to which they represent an authority figure to the child. The differential in power relations can be a threat to the authenticity of focus groups (Davis, 2007). It is well documented that young children can be more suggestible (Lewis, 2004; 2002; Mahon et al, 1996; Hood et al, 1996; Thorne, 1993). One type of suggestibility commonly seen in interviews and focus groups with children is yielding to leading questions or misinformation (Ceci & Bruck, 1993). Children may modify their answer in response to negative or no feedback (Lewis, 2004). Another common tendency among children is referred to as the “acquiescence bias” where children are more likely to answer yes to a question or give what they think is the ‘correct’ answer. Asking open-ended questions or using statements instead of questions is an effective way to try to counteract this.

In this field research, the researcher most of the children knew the researcher as a

teacher in the school. This was found to be an advantage in that there was a level of familiarity and rapport between the researcher and the children. Also, while the children were excited and animated, the researcher's experience as a teacher was helpful in maintaining order in the groups. With regard to the power differential, the children were assured repeatedly that this was not official "school" work and that what was discussed would not be fed back to their teachers. They were also informed that the role of the researcher was to listen and promote conversation. The children were cast as the unrivalled 'experts' in their own fields. During the course of the focus groups, the researcher listened attentively and with a genuine sense of interest in what the children had to say.

Location of the Empirical Research

The context in which the empirical work takes place has a significant impact on the data collected. In this case of the focus groups with the children, the participants were recruited through the school and so there was no flexibility in the location of the research. Three focus groups were conducted in each of the two schools. The researcher in this project works in one of the schools. It is a large junior school in West County Dublin. The second site was the respective senior school. There are approximately six hundred pupils in the junior school who range from 4 years of age to 8 years of age and a similar number in the senior school who range in ages from 8 to 12 years of age. The SES of the families in the area is generally low to middle class. There is also a significant level of ethnic diversity with sixty per cent of children whose parents are not Irish. Every effort was made to keep distractions to a minimum, such as having a quiet place, avoiding times close to lunch-time, play-time or school bells.

The question of whether or to what extent the children should have been remunerated for their participation in the focus groups was discussed with the principals of both schools. They felt there was no express need to give the children anything. However,

the researcher felt that it would be nice to acknowledge her appreciation to the children. After careful consideration, it was decided that each child would receive some colourful pens and pencils. This was a small gift that the children could take away and enjoy but also not one that would cause jealousy among their classmates when they returned after the focus group.

Recording the Focus Groups

The focus groups were recorded using a video camera and a digital dictaphone. The purpose of the video camera was so that the researcher could recognise who was speaking at different points. The use of the video recorder was emphasized to the children, their parents and the school. The researcher agreed to keep the tapes of the interviews in a safe place and not show them to any one else.

In the Field

The six focus groups were conducted in April 2010. The topic guide for the focus groups changed between the first focus group and the following five. Originally, it was planned that each objective would be explored in relation to the media categories. The topic guide for this approach is included as Appendix 1a. However, after the first focus group, it became apparent that it was more logical to discuss each category in terms of the first three research objectives. Thus, for the following five focus groups, the discussion was centered on the six categories of media and within each of these the three main research objectives were explored.

In line with literature in this area, a number of activities were used in the original focus group relating to brainstorming about media, making posters and looking at television guides. The researcher also had a number of pictures of various media to stimulate discussion. These were found to be surplus to requirements. They also kept the discussion at a superficial level. The researcher had not planned for a pilot focus group and on

reflection this was an oversight. The first focus group was not as focused a discussion as the following groups but the findings are still included in the analysis as they contain valuable data relating to the junior boys engagement with their media environment.

3.5.2 *Qualitative Interviews*

Rationale for Choosing Qualitative Interviews

The purpose of a qualitative research interview is to “understand themes of the lived daily world from the subjects’ own perspectives” (Kvale, 1996, p. 27). Kvale (1996) conceives an interview is an *inter view*, meaning that two people exchange views on a topic of mutual interest. According to Laing (1967) the interview is not exclusively subjective or objective; it is intersubjective. The participants of interviews, both the researcher and the interviewees, discuss their interpretations of their world. In this sense the interview is “not simply concerned with collecting data about life; it is part of life itself, its human embeddedness is inescapable” (Cohen et al, 2007). While the interviewer spoke very little within the interviews, there were a small number of instances where she did assert her view to see what the interviewee thought. This was valuable in both deepening the discussion and also in engaging with the interviewee.

Semi Structured Design

Due to the diverse range of people to be interviewed, a semi-structured design was chosen for the interviews. The structure of the qualitative research interview is similar to that of an everyday conversation but involves a specific technique of questioning that it is characterized by a methodological awareness of question forms, a focus on the dynamics of interaction between the interviewer and interviewee, and a critical attention to what is said. Conversation is the means by which knowledge is understood. The ontological aspect of conversation is that it is not simply one of our activities in the world, “we constitute both ourselves and our worlds in our conversational activity” (Shotter, 1993 in Kvale, 1996, p.

37) and this meant that although most of the interviewees were speaking from the perspective of their job, they were also speaking as citizens living in the Digital Age.

The format selected for the interviews was designed to be as open as possible. It involved broader questions where the participants were encouraged to take the lead and shape their own narrative (Appendix 3a). The researcher set the topic for discussion, allowing interviewees to take the conversation where they wanted and then probed for more information in certain areas. The aim was that the interviews would be led by the participants.

Recruiting the Sample

The sample for the interviews was also a purposive, criterion-based sample. Acknowledging the partnership process that is characteristic of the developments within education policy over the past fifteen years, it became apparent that the reality of contemporary education policy and practice in Ireland is that there is a plurality of visions. While the researcher is a teacher, this perspective is only one of many that are valid within the education process. It is a perspective that is constructed in a certain way and from a particular discourse. Although in conducting research of this kind there is always an effort to be objective, as Ball wrote, “we do not speak discourse, it speaks us” (1994, p. 22). For this reason, it was decided to access a number of different perspectives that would bring new and varied discourses to the discussion. These new voices both agree and disagree with the literature and give a depth and nuance to the areas explored in the opening chapters.

Nine qualitative interviews were conducted in February, March and April 2011. The nine participants were:

- A primary school teacher
- A teacher with responsibility for ICT
- A primary school principal

- A Parent
- An IBM Executive
- A Media Literacy Expert
- A Communications Lecturer
- A Co-coordinator from NCTE (National Centre for Technology in Education)
- A Literacy Lecturer

The participants were recruited in a number of different ways – some were acquaintances of the researcher, some were approached because of their occupation and others were contacted based on the recommendation of another participant. The researcher spoke with all interviewees before the interview, outlining the purpose of the research and the kinds of topics that were of interest. Participants were given a small token of the researcher's appreciation for giving their time and opinions.

Informed Consent

The purpose of the research was outlined again at the beginning of each interview. Confidentiality and anonymity were assured and participants were requested to sign a consent form (Appendix 3b). The interviewees were offered a chance to read a transcript of the interview. If they felt there was something they didn't want used in this work, they could withdraw it. Three of the interviewees asked for a copy of their transcript but there were no requests to remove any data.

Location of the Interviews

The interviews were conducted at a time and place that suited the interviewee. Six of the locations were the interviewees' work places and three were in people's homes. The interviews ranged in length from forty-five minutes to an hour and forty-five minutes.

3.6 Validity of the Study

It is the very human, interpretive nature of qualitative research that is the focus of much criticism. Validity in a qualitative study refers to how accurately the account represents participants' realities of social phenomena and is credible to them. It is about being fair to the participants (Lewis, 2002) and refers not to data but to the inferences drawn from them (Hammersley & Atkinson, 1983). It is not surprising, therefore that, qualitative data, when evaluated through the positivist criteria for validity, is found soft and described as "fiction, not science, and that these researchers have no way to verify their truth statements" (Denzin and Lincoln, 2000, p. 8). As a response to these criticisms, Anfara et al (2002) call for making the methodological rigour and analytical defensibility in qualitative studies much more public.

Writing about validity is difficult on many levels as, according to Creswell and Miller (2000), there are many effective procedures advocated in the literature. However, they contend that little guidance is given as to the appropriateness of certain procedures for certain types of projects. They suggest a two-dimensional framework to identify appropriate procedures for various studies. Validity is governed by two perspectives: the lenses the researcher chooses to validate their study and the researcher's paradigm assumptions. The lens in qualitative research is not based on numbers or statistics, rather it is established using the views of people who conduct, participate in, and read and review the study. This is "validity-as-reflexive-accounting" (Altheide & Johnson, 1994, p. 489) where the researcher, the topic and the sense-making process interact. The second lens is that of the participant. Qualitative inquiry assumes that reality is socially constructed and what the participants perceive it to be. The third lens is the credibility accredited to an account by parties external to the studies who will read the study.

In conjunction with the three lenses are the paradigm assumptions behind the study. These worldviews shape the research and were discussed above. This qualitative research is

based on a pluralistic, interpretive, open-ended and contextualised perspective toward reality. The validity procedures emphasised in this paradigm view are trustworthiness and authenticity. Trustworthiness refers to the credibility, transferability, dependability and confirmability of the data. The authenticity refers to the fairness, improved understanding of social constructions and empowerment of action. The potency of research is in its authenticity (Lewis, 2002, p. 113) and this authenticity is ensured in the validity procedures mentioned below. Creswell and Miller (2000) suggest the following procedure to optimise validity:

Qualitative Lens	Procedure
Lens of Researcher	Disconfirming Evidence
Lens of Participants	Prolonged engagement in the field
Lens of People External to the Study	A clear audit trail

Disconfirming evidence is the process where investigators establish preliminary themes or categories and then search for evidence that is either consistent or disconfirms these themes. This brings credibility to the study as there is often a proclivity to find confirming evidence, but examining all of the perspectives highlights the principle that reality is complex and multiple.

Prolonged Engagement in the Field is important because it allows the researcher to build trust, gain access and establish rapport. It also is seen as more credible as it builds a ‘tight and holistic’ case because being in the field consistently solidifies evidence insofar as the researcher can check the evidence and compare interview data with observational data. With respect to this study, while the focus groups were carried out over a short period of time, the researcher has been teaching children at this level for ten years. Working both with whole classes and in smaller groups, the researcher has built up a rapport with children and a comfortable way of communicating with them and allowing them to express themselves.

A Clear Audit Trail is a reference to Lincoln and Guba's (1985) use of the analogy of a fiscal audit to describe the process where the researcher provides clear documentation of all research decisions and activities. The audit process demonstrates the rigour of the research and makes transparent the decisions made both while in the field and in the interpretation and discussion of the data gathered. The documentation provided by the researcher in this instance includes the topic guides used, excerpts from transcripts and the various notes given to participants in the study that are included in the Appendices. The use of NVivo 8 provides a very clear picture and record of how the data was coded and all of the decisions made with regard to sorting and classifying the data that will be discussed in the following chapters. The use of NVivo 8 is discussed in greater detail below.

Creswell and Davis' two-dimensional framework allows for appropriate detail in describing and making public and procedures applied to optimised the validity of the study, the data collected and interpretations made.

3.7 Methods of Analysis

3.7.1 Presenting the Findings

Conducting the focus groups and interviews with participants was one of the most enjoyable aspects of carrying out this research. That people were willing to share their time and opinions adds another layer to the process of analysis, as there is a responsibility to present the findings in a way that is true to what people have said and meant. To aim for objectivity or to claim that the findings are transparent of the researcher's own interpretations would be chimerical. The researcher invariably has been immersed in literature relating to the area, has constructed the topic guide, thus guiding the discussions and at the point of analysis makes the crucial decisions about what is relevant and what is

not. However, as mentioned above, the researcher has taken reasonable measures to improve the validity of the study.

3.7.2 NVivo

In order to analyse the data to the highest standard and to maintain rigour and auditability throughout, the NVivo 8 software package was used. This is a purpose built tool for managing ideas, querying data, graphically modeling findings and allowing the researcher to report from the data (Bazeley, 2007). While using a software programme to work with data is generally agreed to facilitate more rigorous sorting of information, it has also been asserted that “[T]ools extend and qualitatively change capabilities” (Gilbert, 2002, p. 222). It is difficult to say to what extent the findings of this study might have been different if NVivo had not been used. However, it is important to clarify a number of points in relation to working with NVivo.

NVivo itself is not a methodology, rather it supports other established methodologies and it does not analyse information but it allows the researcher to gather and sort information more efficiently. Autocoding was used to sort the findings into broad themes called tree nodes. While this is a quick and easy step in NVivo and much quicker than if the researcher had to print out, highlight and cut up all the transcripts, it required the researcher to do the thinking beforehand. Each transcript had to be read and broad headings chosen and the transcripts formatted accordingly. Similarly at the next levels of coding the researcher manually coded these broad themes into sub-themes known as child nodes. In spite of the use of NVivo, this was a very in-depth and time-consuming process and far from distancing the researcher from the data, the constant reading and re-reading of data brought it closer.

The Coding Strategy – Focus Groups

Phase 1 involved auto coding the threads from the transcripts. The focus groups had been quite focused and covered the same topics and thus it was possible to format the

transcripts with headings and sub-headings that NVivo could then use to auto code. For example, each transcript had a section on television and DVDs with questions relating to their access use and ownership, taste in content and the social context of their use.

Therefore, it was possible with NVivo to sort all of the responses on a given topic under that heading, so that there was parent node called TV and DVD and all quotes relating to this were saved within it (Appendix 4a).

When working with the data and thinking about presenting the findings it was decided that the coding would be more effective if it were rearranged under the research objective headings such as Taste in Content with the various media categories such as TV and DVD becoming the sub-heading (Appendix 4b) and this was the second phase of coding. The third phase of coding involved the researcher going through each node and “coding on” information to new child nodes. So each parent node now had a number of child nodes. For example, with regard to taste in content and television and DVDs, a lot of children spoke about certain content being for girls or boys. Thus, a new child node entitled ‘gendered taste’ was created and all relevant quotes were coded on to it (Appendix 4c). The fourth phase, that marked the end of the coding process, involved creating proposition statements or memos for each child node. In the memo, the researcher supported the quotes with proposition statements that outlined why the quote was relevant, or significant (Appendix 4d). These memos were used for the discussion chapters.

The Coding Strategy – Interviews

The coding strategy for the interviews was similar to the focus groups. Only the broad objectives were used for auto coding and the rest was done manually. This was due to the variance in what the interviewees spoke about. Also, the interviewees spoke for much longer amounts of time, often including more than one point of interest in answer to a question. Rather than cut up sections of speech, the researcher coded whole sections

underlining the quotable sections so that the context in which a point was made would not be lost (Appendix 4e).

3.7.3 Analysing the Data

The data from the focus groups and the interviews was exported from NVivo and was divided into themes and subthemes, where quotations from the participants were collated along with comments from the researcher. At this point, it was possible to begin the analysis and discussion of the findings. This was done in relation to the main questions that had been prompted in the opening chapters. In this way, the views of the participants were presented and discussed in relation to the literature relating to this area. The researcher was looking for ways in which the viewpoints both confirm and disconfirm the literature and also how participants' views were similar or different to each other's. Given the philosophical assumptions of this work in relation to culture, hegemony and common sense, it is also interesting to note how at certain points the interviewees represent and reinforce some of the dominant discourses in relation to ICT in education and literacy and also at other points where their opinions are more critical and can be seen to be challenging the prevailing common sense. Throughout the analysis and discussion, attention is drawn to these points.

3.8 Limitations of the Study

This study was constrained by a number of factors. Due to the time and resources available to the researcher, the sample size at both stages is small. For this reason, it is not possible to infer generalisations from the findings. Another constraint is the topic being discussed. Due to the broad scope of the study, the ever-changing nature of society, and the evolution of ICT within social life, a conclusive study would not have been possible. The paradoxical nature of this work is that its weaknesses are also its strengths. The limitations

impact on the questions that can be asked. So, while it was not possible to make conclusive statements about the extent to which children own, access and use media, or to audit how ICT is being used in schools, the focus moves to a dialogue between what is in the literature and how this is confirmed or disconfirmed within a small sample. The focus becomes the nuance and complexity of the situation rather than the generalisability.

CHAPTER 4

4.1 Preface to Chapters Four and Five

The aim of this work is to explore the claim that learning is changing in the Digital Age. The review of literature in Chapters One and Two prompted a number of questions that merited further discussion with children, stakeholders and experts. The four research objectives represent the four main areas of inquiry explored in the literature review - the Digital Age, children's media culture, ICT and education, and literacy. The layout of the final two chapters is the same as in the literature review with the Digital Age and Children's Media Culture being discussed in Chapter Four and the insights in relation to ICT and Education and Literacy providing the material for Chapter Five.

The discussion chapters are supported with quotations from the participants. Each research objective is explored, presenting the findings from the interviews at the outset and then discussing these in relation to the literature. Where the stakeholders and experts are quoted, their title within the research, such as "Literacy Expert," indicates who is speaking. In order for the children's voices to be clearly heard, a large number of citations from the children are used. Where a child is quoted, their chosen "code name" is used. This is in reference to how confidentiality was explained and guaranteed to the children. For example, each child was given the prefix Senior or Junior, and Boy or Girl, as relevant, and they chose the three numbers that follow i.e Junior Boy 286.

The structure of the interviews was deliberately open so that the stakeholders could lead the discussion and talk about their own area of expertise. As a result not all stakeholders spoke on all topics and thus, particular interviews are featured at different times within the discussion chapters. Similarly, the data gathered from the focus groups with children is afforded primacy within the research objectives that it is most relevant to.

The table below outlines for the reader how the findings are presented in the final two chapters.

Table 4.1 Overview of Chapters Four and Five

Chapter	Research Objective	Participants Featured
Chapter 4	<i>Research Objective 1:</i> What does the Digital Age mean?	<ul style="list-style-type: none">• IBM Executive• Parent• NCTE Coordinator
	<i>Research Objective 2:</i> Exploring Children’s Media Culture	<ul style="list-style-type: none">• Children<ul style="list-style-type: none">○ Junior○ Senior○ Boys○ Girls
Chapter 5	<i>Research Objective 3:</i> What is the role of ICT in Education?	<ul style="list-style-type: none">• Teacher• ICT Post-holder• Principal• Children<ul style="list-style-type: none">○ Junior○ Senior○ Boys○ Girls
	<i>Research Objective 4:</i> What constitutes literacy in the Digital Age?	<ul style="list-style-type: none">• Literacy Expert• Media Literacy Expert• Communications Lecturer

Excerpts of transcripts from each interview and three of the focus groups are included in the Appendices and where a quotation is included from one of these, the relevant line numbers are given so that the reader can consult the wider context that the quotation was a part of.

4.2 Introduction

Chapter Four presents the findings relating to the broader examination of the Digital Age and children's media culture. This chapter provides the context in which to set up a meaningful discussion of learning in the Digital Age in Chapter Five. The focus of this chapter is similar to Chapter One. Where Chapter One focussed on exploring conceptions of the Digital Age, these topics were then discussed in detail with three stakeholders and the findings and analysis are presented here. In conducting the empirical research in this manner, the shared meanings of people living their everyday lives as workers, individuals, and citizens in contemporary society are used in dialogue with the academic literature explored earlier. The opinions and experiences expressed both challenge and support the earlier discussion, and also allow for a broader understanding of the complexity and range of perspectives that impact on learning in the Digital Age.

The second part of Chapter Four relates directly to the children who are at the heart of education in the Digital Age. It represents the findings from Research Objective Two – Exploring Children's Media Culture. The analysis and discussion of this data illustrates the changing media environment that children are growing up in and their opinions and attitudes towards it. This discussion is valuable for educators as there is very little empirical evidence on Irish children's media experiences outside of school and also because discussions of ICT are now suggesting that children's home experiences be incorporated into formal learning. This will be discussed in further detail in Chapter Five, but it is necessary to begin by exploring not just children's technical skills but the shared meanings of their interactions with media.

4.3 Research Objective 1 – What does the Digital Age mean?

The first objective of the empirical research was to explore what the Digital Age means. Having examined, in the literature review, three theories of the Digital Age – the Post-Industrial Society, the political economy of mass communications and the public sphere – the objective was to discuss with three stakeholders their opinions and experiences of what constitutes the Digital Age. Built on the theoretical perspective established in Chapter One and acknowledging the complex interactive relationship between society and education, the focus is on change in society and the implications of this for macro-level issues relating to education. In this way, the findings and analysis foreshadow the themes that are discussed in further detail in Chapter Five.

Of relevance to this discussion of the Digital Age were the views of the IBM Executive, the Parent, and the Coordinator from the National Centre for Technology in Education (NCTE). The IBM Executive is male and has been working in various roles with IBM in Dublin for over twenty years. The Parent is a mother of two girls who attend the schools where the focus groups were conducted, although her daughters were not involved in the groups. The NCTE Coordinator works for the NCTE - an Irish Government agency established to provide advice, support and information on the use of ICT in education. The interviews represent three diverse views with the IBM Executive speaking in very favourable terms about digital technologies and their possibilities, while the Parent had a less optimistic outlook. The discussion with the NCTE coordinator reflects an awareness of the key debates surrounding developments in educational technology. We begin with an exposition of the conversation that followed the question: “What do you think the Digital Age means?”

4.3.1 What do you think the Digital Age means?

The IBM Executive

According to the IBM Executive, the Digital age means three things – interconnectivity of devices, businesses operating in global markets, and a transformation in terms of how we think about the future and technology. He described interconnectivity as driving:

a whole new aspect of information flow and data collection that was not ever conceivable before (Lines 10-12)

This interconnectivity is significant because it facilitates new ways of operating businesses. This relates to his second point; that the Digital Age is about succeeding in the global marketplace. Through the use of digital technologies that allow sharing of “live” information in “real-time”, and interconnectivity between various technologies, he asserted that it is possible to operate business on a global level. He explained one of the advantages of having multiple operations in different locations as he spoke of working to a twenty-four hour clock. In terms of workers, this means that an employee in Dublin can arrive at work, log into a system and continue the work of a colleague in Asia who, being eight hours ahead, has logged off. Likewise, another colleague in America can log into the system later and continue the work. This is a powerful example of globalisation where the geographic location is not an impediment to operating a business, but it becomes an advantage for improving productivity.

According to the IBM Executive, Ireland has thus far benefitted from globalisation because it is a “nice place to live” and so has been chosen as a hub by many multinationals such as Google, Intel and Facebook. There is also a relatively well-educated English-speaking workforce. However, he also spoke about countries such as India and China that have invested significantly in educating their citizens so that they can offer multinational companies a workforce that will work for far less than an Irish worker would expect. As

companies expand into global markets, this produces something that capitalism thrives on – competition – which represents new pressures for National Governments. As was established in Chapter Two, National ICT policies in Ireland strongly assert the need to maintain competitiveness in a global marketplace. One core element of competing is investing in education in a manner that is capable of producing a workforce that is ready for employment in the Digital Age.

The third element of the Digital Age, according to the IBM Executive, is the transformation in how we think about innovation and the future. Speaking about the “smart economy” and thinking about the “new world” he said that it means asking:

where is the future going to be? And the future is not going to be where it was in the past and the people who are going to win in the next “Age” are not going to win by doing what they were doing previously - more of it - because its going to be overtaken.

He went on to say that the people who are going to “win” in the future are those who know how to use technology and apply it in ways that serve their needs. In this guise, technology is not cast as something which will change people’s lives, instead it is something that people can make use of in order to succeed. The IBM Executive’s comments are reminiscent of Bell’s (1973) assertion that in the Post-Industrial Society, life is a “game between persons” where the raw material is not “muscle power, or energy, but information” (p. 127). He also emphasised the importance of innovation starting with theoretical knowledge; starting from what we already know and asking the right questions such as:

why couldn't we have this? Why couldn't we connect that to that? And why don't we use what we already have, get the summary of that and...start from there? (Lines 130-132)

The IBM Executive, while enthusiastic, gave an example of his experience of using new programs and software developed in his company that challenges, to some extent, his earlier discussion of progress. He spoke of a meeting where his team was looking at a new program and he said:

my god, what's wrong with just a list of stuff? You know? Because, everything was scattered, if you like...So, he was saying to me "your problem," this is a twenty-five year old whizz kid, "your problem is you're thinking linearly, whereas this tool is about people who are used to thinking like a web".

He went on to comment that he found some of the developments to be a "gee-whizz" way of doing things we already do. What this point alludes to is a sense that how we think may be changing from being linear to being more like a web and this is a point that is discussed in more detail in relation to literacy in Chapter Five.

The Parent

While, in general, the IBM Executive seemed enthusiastically focused on the future, the same could not be said of the interview with the Parent. When asked what she thought the Digital Age meant, she replied:

I think it means the way our children now don't play anymore, they're surrounded by computer games; they're surrounded by mp3 players; they're surrounded by you know actual lap-tops, computers its all moving towards computers and stuff like that. (Lines 7-12)

When asked if she could think of anything positive, she was circumspect saying that it was all part of a process of change where there are things to be gained and things to be lost:

I mean even to go to the library and take out a book, they are using computers now. God be with the days with the old date-stamp

While she acknowledged that times change, there were elements of this change that she felt were undermining human relationships. Of the three interviewees, her views were the most concerned with society and how it was changing as a result of developments in technology and in particular "social networking". For instance, she felt that people are not used to interacting with each other so they do not know what acceptable behaviour is, and that as a result community spirit is being lost. This also related to how children are growing and learning:

while a computer is making them think to a certain extent, they are not using their creativity and they're not using their imagination. The computer is leading them with it and I think for life-skills that's not good. I think for problem solving, I think

for actual integration into your community, I think for one-on-one conversation, those constant computer things are not good.

As a parent, she was also concerned about employment in the future saying that education needs to be more geared toward the Digital Age. She felt that her children would not be able to choose a job they like, but would have to work in something related to digital technologies. She said that the subject of most relevance for when her children leave school is Mathematics. When asked if she felt it was harder to be a parent in the Digital Age, reflecting a tacit acknowledgement that times are always changing, she replied:

I think it's just different problems for different generations.

The NCTE Coordinator

In response to the question of what the Digital Age means, the NCTE Coordinator said that it means access:

access to other people, access to information, access to life, we'll say life skills or ability to develop yourself as a learner, develop yourself as a citizen ... greater participation as a citizen in your everyday life – access to facilities and services.
(Lines 7-8, 17-18)

Not surprisingly, as someone who works in the NCTE and who would be at the forefront of the implementation and support of ICT policy, her response is indicative of the predominant discourses that were identified in Chapter Two. For example, she places an emphasis on access to information, facilities and services, and participation as a citizen and these are commonly presented in policy as being the benefits for society of increased investment in ICT. However, she also said that there is “pressure” on people because participation and access require a certain level of skill:

in a Digital Age, you need certain skills to be able to partake, in that where information is only presented in one shape or form you need to have the skills to search for the right piece of information knowing that it is valid or is verified. (Lines 34-38)

In many ways this ties in with the educational aspects of ICT policies that emphasise the need to develop the skills of the citizenry to participate in society. Her response is a

powerful example of Ball's assertion that "we do not speak discourse, it speaks us" (1994, p. 22). Furthermore, she was referring to the need for not just technical skills but was also critical interpretive skills that are necessary in order to know if information is "valid or verified".

Considering the question, she also mentioned that the Digital Age has changed communication "beyond the traditional remit". By this she was referring to the ability to communicate at local, national and global levels. She spoke of the opportunities to share information, and construct and deconstruct content and this is reflective of Jenkin's (2007) discussion of convergence culture and how it alters the relationship between technologies, markets, and audiences.

When asked if she felt there were any negative implications of the developments, the NCTE Coordinator identified the pace of change. This was also a feature of ICT policy as established in Chapter Two. In her own words:

the pace of change is controversial in two senses - one the ability to absorb - just when you are getting the hang of one thing, something else comes in....and then, secondly, the cost implication...and the technical support required around these things when they break (Lines 98-103)

At another point in the interview, the pace of information retrieval was also mentioned as a potential downside to the Digital Age. She spoke about how the ease and speed with which information can be accessed could be affecting attention spans and:

the danger of that superficiality of engagement or that the immediacy becomes the thing, rather than the ability to think, the ability to reflect

She felt that because information was so immediate, there was a need in education to "slow people down" because education is not about:

how fast you can get the answer; its about why you got the answer; how you learned it, because the ultimate gain is that you embed something in the thought process

This concern over attention spans is a particularly relevant point in relation to children's learning and schooling and the overall question in this work "Is learning changing in the

Digital Age? It is linked to questions of *what* should be learned and *how* it should be learned and this will be discussed in further detail in Chapter Five.

The concept of the Digital Age is used in this work as a heuristic device to provide a context from which to view changes in education. *That education and society are intricately linked and influence each other bidirectionally, as recognised in the Revised Curriculum (1999), is a core concept in this work.* The following discussion analyses the findings introduced above to focus the discussion on the challenges that the Digital Age presents, at the macro level, for education. This includes questions relating to a Digital Society, how change is perceived, and the implications of this for education.

4.3.3 The Digital Society

Better Access to Information

The NCTE Coordinator alluded to the fact that in the Digital Age, there is greater access to information. While access to more information is touted as one of the main advantages of the Digital Age, the Parent voiced an opinion that opposes this. She felt that children were over-informed about current affairs such as the recession or natural disasters and that this made them worry:

I think for the likes of younger children, they hear too much ... because the media is all through television and computers, there is no censorship. They don't appreciate the fact that there is a watershed time. They don't believe that if a child reads this, how it will affect them I do think that's bad because it's making them worry.

She went on to say that her daughters, who are 8 and 10, were asking if they would have jobs when they grow up or if the recession would end? For her, this represented an encroachment on childhood and calls to mind Buckingham's assertion that the "walls that surround the garden of childhood have become much easier to climb" (2002, p. 32). It is also an example of a viewpoint that is outside of the dominant discourse that we seen within ICT policies that view improved access to information as being unequivocally good.

The NCTE Coordinator described the Digital Age as being about access and she considered this to be positive. However, she also mentioned increased access to unsuitable content and also easier access to children and young people. She said that while unsuitable material has been available in the past, with the development of digital technologies:

people can disguise themselves more effectively online and therefore that's a huge risk (Lines 73-74)

The IBM Executive also acknowledged concern over what he referred to as “Internet Predators”. These points in relation to access of information, as alluded to by the interviewees, highlight an important counter to the overly enthusiastic accounts of the Digital Age.

Each of the three social theories of the Digital Age as presented in Chapter One placed information at the heart of contemporary society. Schiller (1996) was concerned about who owns and controls information. Within the interviews, there was no mention of the increasing amounts of information we do not have access to. There was little discussion of the personal information that one makes readily available as they use digital services such as social networking, Internet banking or shopping online. That this was not the focus of the interviews may explain why the interviewees did not mention it. However, it could also indicate that this is an area that the general adult population should give more consideration to.

Participation and Democracy

In Chapter One, Habermas’ ideal of the public sphere (1968) was explored. This ideal represented a sphere of public society that was characterised by open debate, public scrutiny, and independence from the State and Church. It was also concerned with the flow of information within society and the importance of this for the successful functioning of democracy. The theoretical framework of this thesis, and in particular Foucault’s assertion that “power produces knowledge” (1984, p. 75) and the role of mass communications in

having the power to shape knowledge (Hall, 1986) shows that the quality of information that people have access to is of crucial importance in maintaining an informed citizenry. Habermas was concerned that as private interests invaded the public sphere, the balance of power shifted in favour of capitalist interests and they were able to use this power to their benefit.

In some ways, it is claimed that in the Digital Age, with the development of the worldwide web and Web 2.0 tools, that the balance can be tipped back in the direction of a more open democracy. The uprising in Egypt, Revolution of 25th January 2011, made significant use of the Internet. One activist “tweeted” about why digital media was so important to the organisation of political unrest. “We use Facebook to schedule the protests, Twitter to coordinate, and YouTube to tell the world,” (www.millermccune.com, 2011). On the other hand, during the riots in the summer of 2011 in the UK, social media were considered to be tools of civil unrest, leading to the suggestion by the Prime Minister David Cameron that they be temporarily shut down (Robinson, 27th August, 2011).

The Internet is often presented as an open arena where people can come together with other people of similar interests regardless of geographical locations. The discourse of the ICT policies strongly asserts that ICT can help foster participation in society. The NCTE coordinator mentioned this and the IBM Executive was of a similar opinion when he said that:

there is no doubt with technology, you can transcend class, background all of those sorts of things, if you are up to a level of usage.

However, both interviewees add a caveat to their enthusiastic claims - that access is only possible if one has the relevant technical and critical skills. The acquisition of the necessary skills is a complex topic to discuss because how one acquires skills has to do with many social, cultural, economic and political factors. With respect to teacher’s upskilling,

the NCTE coordinator referred to the importance of having the resources, saying that resources aren't all about equipment but also "your own ability as a human being".

At the outset of this work, the technological determinist stance was rejected in favour of an understanding that sees both society and technology as interacting with each other and leading to change in society. To assume that technology can somehow fix existing social problems places too much belief in the power of ICT. The impediments to participation in the Digital Age are complex and as there appears to be mounting pressure on people to keep up or be further disenfranchised, this represents a disquieting prospect. This discussion relates closely to that of digital divides which follows in Chapter Five.

Personalisation and Individualisation

There is also concern about the impact of the virtual communities on *actual* communities. The Parent felt that computers were undermining the quality of human interaction and that this was a huge loss for society. She felt people were losing the social skills necessary to interact with other human beings because of ICT. Due to developments in ICT, there is increased scope for personalisation and individualisation. This personalisation can apply to the increase in the amount of technology that people have so that they do not have to share a television with other family members for instance. While this may be satisfying on an individual level, these developments in modern media have led to a more heterogeneous and fragmented cultural environment (Selwyn, 2011b). There is a growing area of literature focused on how society is changing and the potentially negative effects of the increased centrality of ICT in public and personal life (Lanier, 2010; Turkle, 2011). While these could not be explored in detail in this work, it is noteworthy that the discourse of ICT policy makes no acknowledgement of this possible downside to ICT.

4.3.3 *Change – A new Era?*

Within theories of the Digital Age, a key question is whether people conceive the Digital Age to mark a critical break with the past or a continuation of prior changes. This is important to consider because how change is viewed has implications for how we respond to it. The dominant discourse of the Digital Age evident in ICT policies is that a radical transformation is happening at a rapid pace. This creates a sense of urgency and the feeling that we are “running just to keep in place” (Boody, 2001). The idea that the pace of change is rapid was evident the interviews. What this illustrates is that it is now what Gramsci (1971) referred to as “common sense” to view society to be in a process of significant and frenetic change. However, as Gramsci cautions this “common sense” is the ideology of the leaders of society that we, the governed people, have come to internalise and view as shared concerns. The ideology that society is being “transformed” as a result of digital evolution is of great benefit in creating an impetus to implement and legitimise ICT-related policy. It also stimulates demand to invest in and use digital technologies in education, work and leisure which is necessary in order to maintain Ireland’s competitiveness in a global economy both as ‘e-workers’ but also as Facer et al (2001) highlighted as ‘e-consumers’.

The concern with adopting a radical view of how digitisation has changed, or transformed, society is that it views technology in very powerful terms. It is advantageous to adopt a more balanced perspective on the presumed benefits of educational technology. As Selwyn (2011b) writes, “technology must be seen in terms of the limits and structures that it imposes as well as the opportunities that it may offer for individual action and agency” (p. 9). Taking a Utopian view of technological change fails to acknowledge that technology is connected with pre-existing social structures and, particularly in relation to education, this does not help in trying to understand the ways in which technology could or should be used. It also doesn’t allow for the fact that technologies do not always change

things for the better and that there may be any number of unintended consequences to using technology in schools such as digital divides or, as the parent mentioned, a loss of creativity.

A Balanced View of Change

While this attitude to change was in evidence in the interviews, the stakeholders also put forward views that extend it from oversimplification to a more nuanced understanding. The Parent highlighted the potentially harsher realities of how change affects people. She viewed the changes in the Digital Age as a prolonged period of adjustment, saying:

I do think there is going to be a whole area of trying to find ways for the Digital Age to fit into our lives and for us to fit into that life because I worry about where the jobs are going to come from for the people. (Lines 99-101)

Bell's (1973) contention that the Post-Industrial Society is one where jobs are displaced in favour of more theory-based employment resonates to some extent with the discussions in the interviews. However, it is also important to consider the people whose jobs are displaced. This had particular resonance for the Parent as she was watching her own job become gradually more automated through the use of technology. She was concerned that her career would become "extinct" and when asked how she was coping with this possibility she said "you just keep your head down and pray."

Both the NCTE Coordinator and the Parent concluded that what was most important throughout the process of change was maintaining a sense of equanimity. The Parent described the Digital Age in pragmatic terms saying that:

as we're saying goodbye to one part of our lives, we're saying hello to another. I can't say its bad or its good, I think its all about getting an even keel and that's the hard part. (Lines 22-25)

The NCTE Coordinator spoke about her perspective on the level of change, acknowledging what she described as the positives and the negatives, and concluded that ultimately, "you must reach balance in your life".

Leading or Following Change

Adopting the dominant discourse of change that requires a rapid response and action, with almost no time to plan or consider the consequences, is asserted as being an area of real concern. An attitude to change that is focussed primarily on trying to “keep up” is debilitating to developing educational technology because it relegates educational professionals to chasing change instead of being active participants in it. In contrast, there was no sense of trying to keep pace with changes in the discussion with the IBM Executive. His perspective was much more focused on the future and he projected an attitude that was autonomous and authoritative over the direction in which change was happening. As the above citation from the IBM Executive showed, one of the significant aspects of living and learning in the Digital Age is taking command of ICT and asking questions like “Why couldn’t we have this?” Taking this perspective underlines Conlon’s (2010) point that, as educators, we need to envision change in education and make use of technology, as opposed to standing back and letting technology change education.

4.3.4 Implications for Education

The stakeholders were also prompted to elaborate on what they felt the implications of these changes were for education. While the final chapter focuses on how various stakeholders and experts feel education is currently responding to changes, it is necessary throughout the discussion to keep returning to the overall focus of this work and that is an exploration of the assertion that learning is changing in the Digital Age. It is also necessary to remain cognisant of the fact that, according to various official reports, ICT has yet to become embedded in everyday schooling (DES, 2008b). With these two points in mind, it is useful to refer to the perspectives of the IBM Executive and the NCTE Coordinator on this subject because in many ways they represent two dominant perspectives with regard to

education in the Digital Age and also because they raise points that are further developed by the interviewees in Chapter Five.

Education for Employment

With regard to how formal education could benefit most from investment in ICT, the IBM executive spoke about India and how they educated their workforce to use technology, thus making them more attractive to multinational corporations. For him, this represented a very clear example of using the education system to respond to a changing global economy. With respect to Ireland, he said that computer science skills were not being developed early enough. In an effort to support educational programmes, IBM felt they were better investing in second-level rather than third-level institutions. He also said that companies such as Intel, Google, Facebook and IBM are competing over a small pool of computer scientists in Ireland who are creative and innovative. Acknowledging the importance to the State of investing in developing young people's computer skills, he concluded that:

If you wanted to breed the next generation who will be capable of adding value to the sciences and to the advancement, they are the people you need. And you need it early...

ICT and Changing Learning

The NCTE Coordinator works with schools in the use and promotion of ICT within education. Her opinions, therefore, provide a good overview of how ICT is being used presently and ways in which it could be used to better effect within formal education in the future. She highlighted that, at present, ICT is seen "as a tool" and while this helps children to achieve some technical skills, unless it is used often enough and in a variety of ways, she felt ICT would not become embedded in formal education. With respect to interactive whiteboards, she said that if that is the only way that technology is presented to children that it is "very limited use and potentially not best serving in the long term." When asked what the Digital Age would look like in a situation where ICTs were embedded in learning, she

responded with a detailed picture of an ICT-rich classroom where children are actively and independently using ICTs. The following quotation is an extended one but is included here to indicate the breadth of change that is possible:

*the kids that are really benefitting are in classrooms whereby they have that scenario of **an interactive whiteboard** or just a digital projector and teaching computer, maybe a visualiser. They have, you know, **three or four digital cameras floating around at their fingertips**. They have a **digital video camera set up all the time on a tripod**, and there are classrooms like this. They have some kind of **editing suite** where they can edit, they have, some of them have a **trolley of fizzbooks** that they can wheel in and they **have a little webcam** on it and they do their **Fis Book Club** and they review their books on it, or they may **Skype** to another partner school and they genuinely do this and they have a **USB microphone** but that's all on the go and there are probably new things being added into the mix as we go along.*

Through the use of ICTs in this way, children and the teacher are organically using ICT, creating content and learning in a myriad of ways. What is significant about this illustration is not simply that children are using ICTs, but the ways they are using ICTs with autonomy and purpose and also that this does not represent an end point, as she says new things are “added to the mix as we go along”. If this were happening in schools, it would give some credence to the assertion that “learning is changing”. However, she described the use of ICT in schools as “patchy” indicating that this scenario is not commonplace.

Becoming Critical

The NCTE Coordinator was also concerned about developing children’s critical literacy skills and felt that the level of critical literacy that the children could acquire through simply using ICTs as a tool to enhance other subject areas was not sufficient. She gave the example of using computers for Mathematics:

if you try and put a square into a round [hole]...when you try that it won't fit but that is a critical thinking maths skill as opposed to a critical thinking ICT skill.

She also highlighted a more deep-seated concern about the discourses, or lack of, in relation to ICTs in education. Given the assertion implicit in this work that there is a need to critically engage in debate and discussion about using ICTs in education, the NCTE

Coordinator asserted that within the Draft Plan for Better Literacy there is a silence and a lack of recognition of new forms of literacy:

not even the absence of digital literacy because it's hard to define that, but more the absence in talking about literacy; the need to absolutely validate writing on a blog as a valid form of literacy.

This point is significant because it exposes the curious dearth between enthusiastic claims that “learning is changing” and how this new learning is not legitimised within discussions of improving literacy standards in Ireland and this was established also in the literature review. Another point of contention in Chapter Two was how the NCCA presented a detailed discussion of various literacies and suggested that what it means to be literate in the twenty-first century may have changed (2004) but in the Framework for ICT (2007) the word literacy is used only once and inconspicuously. When the NCTE Coordinator was asked about this, her response was intriguing:

I think because that was going to teachers, they just wouldn't want to cause more confusion. I don't know if they [teachers] were ready for it. I still don't know if we are ready for it...

While criticisms of teacher's technical skills are often mentioned as a barrier to ICT becoming embedded in education, this assertion by the NCTE Coordinator points to a lack of readiness that is based more at the level of theory than practice. She felt that using the word literacy would cause “confusion” for teachers. This provides further substance to the claim of this work that the discussion of ICT in Irish education positively requires and depends upon a deeper engagement with the changes at a theoretical level; that it should not be considered “no longer a matter for debate” (DES, 2008b, p. 16).

What the IBM Executive and the NCTE Coordinator's opinions show are two different perspectives. Where the former is concerned with how we can use ICTs in education to serve the needs of the State, the latter is more focused on how we can use ICTs to enhance learning and also highlights an area that is currently absent from the discussion of how literacy is changing and what forms of literacy should be validated.

4.3.5 Summary of Research Objective One

The findings from the three interviews featured above highlight the key themes that emerged in answer to the question “What does the Digital Age mean?” The three stakeholders represent different views but also different discourses. It is not surprising that someone who works in IBM, a company that prides itself on being progressive and at the forefront of technological innovation, would be enthusiastic about technology and its future. However, even he felt at times that they were inventing “gee-whizz” ways of doing things. Similarly, the Parent spoke from a place of concern for her own children. She was reflective in her consideration for what she wanted for her children and how to integrate ICTs into their lives without sacrificing what she believes to be important. This view is challenges the predominant views of technology being uniformly positive. The NCTE Coordinator’s response was most closely linked to the discourse in ICT policy that espouses an ideology where ICTs are positive in many ways for the individual and society but it is important to note that she also emphasised the need for citizens to acquire both technical and critical skills if their participation in the Digital Age is to be secured.

That advances in digital technologies can be a positive for society, improve participation and enable an informed citizenry is a claim that is not without merit. It is the contention of this work that technology alone cannot bring about changes. People can appropriate ICTs to further such goals and in order to do so it is crucial to have both technical and critical skills. Education has a key a role to play in fostering these and this is developed in further detail in Chapter Five. Within this discussion, each of the interviewees offered an insight that is significant as this discussion develops. The IBM Executive asserted that the Digital Age represents a new way of thinking about the future and technology. This assertion is one that surfaces again with other interviewees particularly in relation to teachers – the implication being that in order for there to be change in education, it is necessary firstly to change how we think. The Parent said that the Digital Age is a

period of transition and as such requires adjustments. This is a significant insight as it acknowledges the need to have a balanced attitude to the process of change. The NCTE Coordinator was persistent in her claim that the opportunities of the Digital Age require skills, both technical and critical, and that the challenge for education is to use ICTs in ways that cater to both of these.

4.4 Research Objective 2: Exploring Children's Media Culture

Concern has been expressed that ICT has failed to become embedded in education (DES, 2008a, 2008b). In contrast, digital technologies appear to be playing an increasing role in children's leisure pursuits outside of school (CCME, 2001). The approach to digital technology within education policy tends to be focused on using it as a "tool". Outside of school, however, children are engaging with digital technologies as cultural forms (Buckingham, 2007). *It is posited that acknowledging and understanding this contrast in approaches and perspectives with regard to children's use of ICT is a crucial element in moving forward with ICT in education.*

In Chapter Two, reference was made to the assertion that we need to incorporate children's existing uses of digital technologies into formal schooling (DES, 2008a). In order to take this assertion seriously, it is necessary first to gain some level of understanding of how children engage with ICT. This section of empirical work explores children's media culture. The core objective of this research was for children to talk about *their world* in *their words*, so that we as educators might better understand, and cater to, their needs within formal education. In conducting the focus groups, it was considered of primary importance to foreground the children's own perspectives. As Livingstone and Boville write:

the point of listening to children is not just a liberal fancy, but stresses the importance of discovering children's definitions, conceptions, priorities, and

assumptions rather than assuming that they endorse an adult understanding but express it imperfectly. (2001, p. 38)

In April 2010, six focus groups were conducted with 33 children from a Junior and a Senior Primary School in suburban Dublin. There were three focus groups in the Junior School with children from second class – one all girls, one all boys and one mixed. The same process was carried out in the senior school with children from sixth class. Due to the vast amount of data generated, and the importance accorded to foregrounding the children's voices in this work, the findings from the focus groups are presented in significant detail and with a large number of citations. Where a child is quoted, the prefix of Junior or Senior, and Boy or Girl, is used along with the three-digit code name that each child chose. The children also spoke about their opinions of ICT in school and this data is used in Chapter Five to inform Research Objective 3 – What is the role of ICT in Education?

In Chapter One, there was a detailed discussion of the findings and discussion from the Children's Changing Media Environments (CCME) study (2001). Within this section, the findings from the empirical work are compared to the earlier European findings. This provides insight into how Irish children's perspectives and environments compare to their European counterparts and it also gives a sense of how these media environments have evolved over the past decade. For the purposes of clarity for the reader, references to Lemish et al (2001), Suoninen (2001), Pasquier (2001) and Livingstone and Bovill (2001) are all from the CCME Study.

4.4.1 Research Objective 2a: What is their Access, Use and Ownership of Media?

In exploring the question of access, use and ownership, the objective is to get a sense of what media children are using and to explore their attitudes to this. The evidence suggests that children have access to, use and own a wide range of media from televisions to computers, cameras to mobile phones, news papers and books. One of the defining characteristics of this generation's interaction with ICT is known as trans-media use. This

refers to how content is not medium specific. Children can watch television shows, listen to music, read about their favourite stars and play games all on a computer. As the following quote shows, a period of time on the computer can cross many genres and what would have been done using different technologies in previous times:

Junior Girl 118 *I like to go onto the Internet [to] You Tube and then I get bored so I go onto games. I like to play dressing up games and I like to listen to lots of music. My favourite music on You Tube is Justin Bieber.*

The children also reported using more than one device at a time such as watching television while using the computer.

In Chapter One it was established that even if children have access to a variety of ICT, this does not necessarily mean that they will use them. Therefore, access and use are related to social, cultural and psychological factors. Within this research objective, this is explored in relation to three main areas – use of television and computers, motivation to own a mobile phone, and attitudes to books versus films and television.

Television and Computers

All of the children, except one, had access to multiple televisions in their homes in many locations:

Junior Girl 121 *We have loads of TVs. There's one in the sitting room, one in the play room, one in my room, one in my sister's, one in the attic, one in my brother's room and one in my baby sister's room.*

Children reported watching television before school, after school and in many different social contexts as will be explored in more detail below. While televisions are commonplace in homes, and most children were enthusiastic in speaking about it, it would be incorrect to assume that this is all that children do. There were a number of children who spoke about what they would rather do than watch television such as spend time with their friends outside.

All children claim to have access to a computer at home. The location of the computer is considered within the literature to be a good indicator of children's usage, with computers in communal areas representing a more family-oriented usage while computers in bedrooms imply a more individual or peer-centred usage (CCME, 2001). The majority of children said their computers were in the living room or family areas. Some of the children have laptops and use them anywhere in their house. There was no distinct difference in the location of computers in relation to age. How children use computers, however, marks some significant differences in relation to both gender and age. The senior girls reported using computers primarily for keeping in contact with friends via social networking sites (SNS) such as Bebo and Facebook⁵ and using instant messenger⁶ and email. These activities were not as common with the senior boys. While in the Senior Mixed group, the boys mentioned using SNS, when the Senior Boys group were asked if they used Instant Messenger, one boy replied "What's that?"

The younger children were familiar with Facebook but were not using it in any consistent way. Some younger children mentioned emailing their extended family in Ireland and abroad. However, for many children, they set up email addresses so that they can join online games:

Junior Girl 118 *I just made up an email cos sometimes it says, "Write your own email" and I don't really go on it for.... I just wanted to use it for a game...*

Online clubs and games were popular with the junior girls in particular. They spoke in detail about joining clubs like Club Penguin, Stardoll and Panfu⁷ - games that involve

⁵ Bebo and Facebook are social networking sites where users have a profile page where they post blogs, photographs, music, videos and questionnaires. They can communicate with friends.

⁶ Instant Messenger (IM) is Real-time Internet communication via small pop-up windows with a transcription of the conversation.

⁷ Club Penguin, Stardoll and Panfu are Online Role-Play Games aimed at children aged approximately 6-14. Children create an avatar. They can be used for free or through a subscription that allows more options and advertisement free content.

paying for membership, although there are various levels that are free. Although these sites are targeted at boys and girls, the junior boys did not mention them.

All of the children presented themselves as confident users of the Internet describing it as being useful for finding out information such as sports news, pictures and sometimes helping with homework. When asked about on-line shopping, children were aware of it but they are not making purchases themselves. This is not surprising as the children are too young to have credit cards, but it can be seen from the following quote that the Internet is being used in relation to purchasing consumer goods:

Senior Girl 127 *No. I've looked at clothes on-line and then I went into the shop and bought them. That's what I did for my confirmation clothes.*

Motivation to own a phone

The patterns of ownership of mobile phones were varied across the groups, as were the attitudes to phones and reasons for getting them. This was an area of discussion where the culture associated with digital technologies was most evident. For example, in the Junior Boys Group, when five of the six boys said they had phones, the sixth boy changed his answer and said that he had one too. However, in the Senior Boys Group, the opposite was the case. When the researcher asked if any of the boys had phones, one boy answered quickly that he had two. As the other boys engaged with the conversation they spoke about phones in a derogatory manner, mentioning breaking them and dropping them down the toilet. When the boy who had two phones spoke again, his attitude had changed:

Senior Boy 236	<i>I didn't want a phone, my dad just got it.</i>
MH	<i>And why did he get it for you?</i>
Senior Boy 236	<i>I don't know, he didn't tell me</i>
MH	<i>And what do you use it for?</i>
Senior Boy 236	<i>Nothing.</i>

What both of these examples highlight is how owning a particular device may be conceived of as a status symbol as in the junior boys focus group or it may be the opposite as with the

senior boys. At a given time or place, the meaning attached to an object through culture may be constructed in different ways.

There was also a difference in how the junior and senior children use phones. There were few examples of the junior children using phones in any consistent way to make phone calls or text, although they are competent users of their parents and siblings' phones for playing games, listening to music, and taking pictures. The Senior Mixed and Senior Girls groups were enthusiastic about their phones. In contrast to the junior children, they were using their phones to call or text friends, arrange meeting places, and also maintain contact with their parents. As such, they could be said to be a symbol of burgeoning independence for older children.

Books, Films and TV

Since the advent of television, there has been fear expressed that traditional reading culture would be replaced by a more image-centred culture (McLuhan, 1964). As children's experiences with an ever-increasing variety of media develop, there is a fear that this will replace reading culture. When discussing books, there was some divergence in the responses. Many of the children at both age levels could give examples of books they enjoyed reading. At the time of research, the *Twilight*⁸ books and movies were very popular. The girls mentioned these books as being something they liked, although when asked if they prefer the book or the film, they preferred the film. A similar discussion took place with the Senior Boy's group. They had read the novel *Goodnight Mister Tom*⁹ with their teacher and had watched the movie on television. Their comments suggest that there

⁸ *Twilight* is a series of four vampire-themed fantasy romance novels by American author Stephenie Meyer. They have also been made into films.

⁹ *Goodnight Mister Tom* is a 1981 novel by Michelle Magorian. It follows a young boy, William Beech, who is evacuated from London during the air-raids of World War II, and put into the care of Tom Oakley, an elderly recluse. Thanks to Tom, William Beech is able to experience a new life of loving and care.

doesn't necessarily need to be an "either or" situation. Sometimes watching the film enhances the experience of reading the book:

Senior Boy 285 *It gives you a picture of the characters.*
 Senior Boy 963 *...Cos you understand it a bit more better.*

The discussion indicated that children have access to books at home, through school and the library. However, in relation to the library one girl said that:

Junior girl 118 *My mam makes me get lots of books...cos she wants to make me smarter.*

Although she takes out books on a weekly basis, she said she didn't always read them.

Attitudes to reading and books were found to reflect the children's personal preferences and in many cases the impulse to read is created by an interest in a particular subject, and this point is developed in relation to taste in content below.

4.4.2 Research Objective 2b: What is their Taste in Content?

Talking to the children about their taste in various media content provides the opportunity to explore the two assertions made in the CCME study and mentioned in Chapter One; that media preferences can be used by children as a means of asserting their identity and that tastes can be a significant motivation for children to use new technologies.

Taste and Gender

As in the CCME (2001) study, there is evidence to suggest that children have different tastes in media products based on having varied interests. Because boys and girls have different interests, this can lead them to liking different media content and also being drawn to different technologies. In the discussions, the children were particularly aware and unquestioning of a divide in media use and taste along gender lines. As one girl explained:

Junior Girl 118 *There are lots of different games, cos for boys there's shooting, for girls there's girls games... um dressing up or cooking, make-up...*

The reason given for boys and girls liking different things is:

Senior Girl 127 *Cos they have different personalities and all.*

In order to assert their gender identity, the children were critical of tastes and practices associated with the opposite gender. For example, the girls reported liking magazines that feature celebrities and fashion content. The Senior Boys Group voiced critical opinions of these magazines and this could be a way of distinguishing themselves from feminine tastes:

Senior Boy 285 *Yeah, about celebrities. So boring. Why would you want to know about someone that's famous when you have like...?*

Senior Boy 236 *Invading their personal life....*

Senior Boy 963 *Yeah. My sister mostly likes it and my mom as well, the both of them and they end up reading them.*

In the Junior Mixed group, the discussion of gender and television became heated as two of the boys and two of the girls asserted their own gender identity by putting down the other gender's taste:

Junior Boy 286 *mostly I eh hate...when I watch something and it's on for a minute and then it goes back to something girly like H2O¹⁰...*

Junior Girl 118 *I hate Spiderman¹¹, em Ed, Edd and Eddy and I hate boys' shows like football.*

It is interesting that the degree of polarisation is starker in the Junior Mixed group as opposed to the Junior Girls group. In the Junior Girls group there was agreement that boys and girls like certain shows - the distinction being that shows for boys have boys in them, while shows for girls have girls in them. The polarisation of taste along the lines of gender was also evident in the older groups. The musical show *Glee* was very popular at the time of the focus groups. Although the boys apparently didn't watch it, they expressed negative opinions on it.

¹⁰ *H2O* is a children's animated programme about mermaids.

¹¹ *Spiderman* is a cartoon based on the comic book and *Ed, Edd n Eddy* is an animated series about three quirky boys dealing with the pressures of growing up

Implying that another boy likes a programme that is considered for girls was also used as a playful put down in the Senior Boy's Group where two boys exchanged comments under their breath as another boy was speaking:

MH *What do you think girls like?*
 Senior Boy 285 *Girls would like iCarly and all that stuff*
 Senior Boy 379 *Fashion stuff*
 Senior Boy 963 *(quietly to Senior Boy 285) You like it as well!*
 Senior Boy 285 *(quietly) No I don't!*

While the children were vocal in their assertion of gender differences, in each of the groups there were examples that indicated that the actual divide was not so stark. In the Senior Mixed group, it was agreed initially that boys and girls like different music. When asked what girls would like, JLS and Justin Bieber were mentioned with one of the boys saying that he did not like them. When asked what he liked, he said Cheryl Cole and the Black Eyed Peas, but the girls in the group also liked these two artists. This illustrates a difference in children's perception of a divide and the reality. However, this may also tie in with the suggestion that there can be a "female adjustment to male interests" (Lemish et al, p. 270) where girls like things that are for boys but boys do not like things that they perceive as being for girls. This topic came up in the Junior Girls discussion too and as the conversation developed, one girl recognised that the divide between what she and her brother liked was not so clear:

MH *What about your brothers? What do they like to watch?*
 Junior girl 786 *Well my little brother likes to watch Ben10¹² and I watch it with him, cos I do like....I do like em boys programmes as well and my brother actually likes I Carly as well!*

The senior girls also acknowledged there were times when they watched football and when their brothers enjoyed "girls' programmes". All of these examples indicate that

¹² *Ben 10* is an animated TV show about fighting aliens.

through discussion and questioning, children can be enabled to challenge some of the hegemonic ideals that they are using to understand themselves and their worlds. Through starting from the children's own experiences of the world, as Freire would advocate, learners can be enabled to critically reflect on some of the things they take for granted.

This is of especial concern in relation to gender divides because the ways that children interact with media can be related to the process of gender development (Lemish et al, 2001). As stated in Chapter One, boys typically enjoy sports and adventure genres that show active higher status males while girls are more drawn to serials and romance genres where women tend to be validated with respect to their appearance and love relationships. This supports the idea that gender differences are influenced by children's media culture. Lemish et al (2001) suggest that media consumption is both a means and an end in the process of gender construction; in contributing to children's cultivation of values, social norms and expectations, it in turn helps shape children's self-evaluation and aspirations. At the same time, self-perception and socialisation pressures shape the construction of gender-appropriate interests and behaviours related to media-consumption.

In the CCME study, the conclusions on this topic were tentative and left open the possibility that the picture of gender segregation was of a particular point in time. They suggested that in the future, the division might not be so stark. However, within the context of this empirical work, the findings from 2001 were corroborated. There is a significant divide that the children are both aware of and apparently support. What is also noteworthy is that it was found in 2001 that boys were more likely to be using computers and this, it was suggested, was most likely due to the fact that girls have a lack of interest in computer games as opposed any innate abilities that boys may have (Drotner, 1999). Although the sample in this study was small, it was found that the girls were using a wide variety of technologies such as computers, the Internet, games consoles and portable games which would support Drotner's claim.

Taste and Age

Discussing likes and dislikes can also be used to assert an age identity. Voicing an opinion on a media product that infers that it is for younger children indicates that one is older and wiser which is an important part of growing up. This was evident in many aspects of the media discussion. When one senior boy spoke of going onto Club Penguin, one of his friends laughed and said:

Senior Boy 963 *It's for five and seven year olds!*

Another boy talked about why he doesn't go on a certain website any more:

Junior Boy 286 *Because eh...its mostly just Power Rangers on it and I was only small when I liked Power Rangers.*

The children said that their taste in music had changed since they were younger. For the senior girls, they felt that because they are older they have access to better music. There was similar evidence in relation to how they viewed their taste in television where products for younger children were presented as being for “babies”.

Children also had opinions on adults' taste that were often portrayed as boring. One boy spoke of how his aunt watched Sky News and he felt this was boring because it kept repeating the same stories. Children also mentioned history programmes as being boring and one girl spoke of how even her mother found her dad's taste uninspiring:

Senior Girl 454 *Its really annoying - when mam tried to take the remote off him and he wouldn't give us it cos he kept watching some, like, cowboy film and my mam just wanted to watch like something else, something good*

In this way, discussion of taste apparently links to asserting one's identity. Just as a rejection of male media tastes as boring can reinforce the feminine identity, the condemnation of certain shows as being babyish can be used to assert a more mature identity. Similarly, rejecting programmes for being boring and for older people can emphasise an individual's youthfulness.

Taste determines the Media Used

As was established in Chapter One, the CCME study (2001) found that children's tastes were leading them to use particular media. This is particularly relevant with respect to reading. When children spoke about what they enjoy reading about, it was clear that it was not in isolation from their other media use or general interests and this was the case across age and gender. Some of the junior boys described reading books as being "boring". However, it is not "reading" necessarily that they didn't like:

Junior Boy 106 *Well, I don't really like reading books, I only read a bit of them in the day, but I really like reading magazines. Only football books are good.*

A lot of the boys, junior and senior, mentioned reading football magazines:

Senior Boy 285 *They tell you like, the best player in the world and all that stuff...*

Senior Boy 236 *And they have stickers in the middle and have crosswords, like three or four of them and there's jokes and all.*

The girls' different interests lead them to be more interested in newspapers and other magazines. For example, one girl spoke about enjoying looking at the pictures of celebrities in newspapers:

Junior Girl 786 *Em, yes I do. Like, em, their fanciest dresses. They had this one with really fancy dresses and em Lady Gaga was last and first was Cheryl Cole.*

MH *Whose clothes do you like?*

Junior Girl 786 *Oh, I especially love Lady Gaga's. They're so crazy, artistic, really fascinating!*

Another girl said:

Junior Girl 279 *I only get magazines only if John and Edward¹³ are in them....*

Girls in the senior groups similarly mentioned reading books that were linked to films and music. Confirming the CCME (2001) findings, children's preferences are not media-led,

¹³ John and Edward (aka *JEdward*) are identical twins and an Irish pop duo that amassed a following through appearing on the *X-Factor*.

rather they choose programmes and games that are in-line with their general interests and they follow their interests across different media platforms.

The children in all of the groups mentioned You Tube as a source of new music, television shows, football goals and funny videos that they tell their friends about. They talked about clips that they like watching:

Junior Girl 786 *I go on, like, to listen to new songs and funny videos. Like a funny video, like, with a baby...having its first lemon, something like that.*

Or:

Senior Boy 236 *I just use it to watch videos on YouTube and watch sports and stuff. Like some fake injuries...*

In Chapter One, reference was made to Brown's (1976) claim that children would reorient their media use to new technology if three criteria were satisfied - the new medium represents a wide variety of content, the child can control the selection of content and that no specific skills or training are required to use the new medium. The children's widespread adoption of You Tube would appear to verify Brown's assertion. This finding is particularly relevant when we consider that ICT has become embedded in children's lives while it is still not satisfactorily so in formal education, according to reports.

4.4.3 Research Objective 2c: What are the Social Contexts of Media Use?

Children's interaction with media is a fundamental aspect of their lives as social beings. In the discussions, it was clear that media permeate all aspects of their social lives. They enjoy media with family, with friends and also alone depending on the situation. The CCME (2001) findings raised a number of questions in relation to the social context of children's media use and these relate primarily to the contexts of family and of friends.

Family

Children use computers and the Internet at home and so the family is a significant influence. For some children their parents are experts, using computers for work and

helping children to use them. In other cases, children were not impressed with their family member's skills in this area:

Senior Boy 963 *Because I always go on it everyday and my mom took a course on the computer and two weeks later she forgot everything about it and that's when our computer broke down so we had to get it fixed.*

In many cases, older siblings and in particular older brothers were, cited as being influential when it came to technology in general and older siblings were often mentioned as telling the children about games or web sites. The family context was also important with regard to taste in, and enjoyment of, music in the younger groups where children mentioned listening to music with their parents and grandparents. The older children did not mention their parents in relation to their taste in music.

Within the structure of the family, it is clear that the television is a contested site, where some siblings fight for control and domination with siblings:

Junior Boy 168 *We don't really share it.... if I choose a cartoon, she just looks at it.*

There were also examples of children having to watch programmes that suited other people in their family such as their parents or younger siblings. However, watching television with other family members wasn't always viewed as being negative and this was evident across age-group and gender. When asked whether they preferred watching television alone or with family downstairs, two of the senior girls replied downstairs. A lot of the children mentioned times where they enjoyed watching television with their family. In the Junior Girls Group, they had lots of examples of programmes and films that the whole family could watch together such as *Harry Potter*¹⁴ or *Nanny McPhee*¹⁵, or television

¹⁴ *Harry Potter* is a series of seven fantasy novels and films written by the British author J. K. Rowling. The books chronicle the adventures of the adolescent wizard Harry Potter and his friends who are students at Hogwarts School of Witchcraft and Wizardry. The main story arc concerns Harry's quest to overcome the evil dark wizard Lord Voldemort.

shows such as *The Simpsons*. When asked how it made them feel to watch television with their family, one girl replied:

Junior Girl 446 *You feel all cuddly and all huggy and all and you feel really excited.*

This would support Lull's (1990) assertion that television viewing can have a positive influence on family interactions. Not only were family-oriented programmes popular, but also children were influenced by shows their parents liked such as *Coronation Street* or *The Apprentice*. The senior girls in particular spoke about watching soaps with their mothers.

The CCME study found that discussing media rules was a good way to understand the role and importance of media in the home (Pasquier, 2001). Rules were generally about issues such as going to bed and getting homework done. As one boy said:

Junio Boy 619 *on the weekends and Friday...when we are coming back to home we are allowed to watch whatever we want for whatever time cos it's not like tomorrow we are going to school.*

Another reason that rules were necessary was when family members share media:

Junior Girl 118 *No rules. Well only one rule, if [brother] is in the house, she says, "Play half an hour" but I play sometimes longer than half an hour.*

As the quotation shows, rules are not always enforced. As mentioned in Chapter One, this was thought to reflect changing patterns in authority in families. Getting around media rules is also considered to be an important part of children growing up and negotiating power with their parents. While this may be the case, it raises concerns about parents wanting to keep their children safe. The CCME study found that children's use of new technologies weakens the traditional power relations between them and their parents and puts parents at a greater disadvantage. One of the key findings in interviewing both parents and children in the CCME study was that children and parents have fundamentally

¹⁵ *Nanny McPhee* is a fantasy film set in 19th century England about a magical nanny.

different attitudes to media. “For children, computers are fun; for parents they are socially important (Pasquier, 2001, p. 174). It is important to note also, at this conjecture, the relative freedom in relation to media use that children perceive themselves to have, as this is not necessarily the case with their experience of media use in school. It also may be the case that children have fundamentally different attitudes to media than policy writers and teachers.

Friends

In all of the European countries in the CCME Study, it was found that children would rather spend time with their friends than with media (Suoninen, 2001). However, it was clear from speaking to the children that various media form an integral aspect of their interactions with friends. Computers and the Internet are used as a way of keeping in contact with friends and family. The children in both the senior and junior groups mentioned social networking sites, although the junior children were vague in their discussion of it. In the senior groups, they use these everyday to talk to their friends. They also personalise their pages with photographs, songs and quizzes.

Children in both junior and senior groups also said that they talk to their friends about

You Tube clips:

Senior Girl 454 *You’d say like “Go on to this” and like say...*

Senior Girl 127 *“There is something good on this” or “its really funny” or “you should watch it”*

Another area where friends were particularly influential was music. There was evidence that children swap and share music. The Internet and mobile phones have made it easier both to share and listen to music friends tell them about:

Senior Girl 127 *Sometimes my friend gets them off the Internet and she sends them to me, then I have them on my phone, so I listen to them...*

There is a lot of evidence to suggest that children also talk about the content of magazines with friends. This is most likely due to convergence culture (Jenkins, 2008) where they buy magazines because the content is what they are interested in such as the girl who buys magazines with “JEdward” in them, or the boys who buy football magazines. Within the Senior Boys group they said they didn’t swap books or share what they liked reading with each other. In the senior girls group, however, swapping books and magazines was an important part of the ritual of the sleepover:

Senior Girl 127 *Sometimes we’ll read a really good girly book or magazine or something, or sometimes we’ll just swap them. Cos we used to collect magazines, the Shout magazines and we had like fifty of them and sometimes we’d have different ones so we’d all just swap them with each other.*

The boys referred to friends as being both a good source of games and also helpful for improving skills. Some of the children spoke about going over to their friends’ houses to play against each other. Technology also seems to be keeping up with these social developments (or leading them) as successive generations of Nintendo DS’s offer more ways to share games. Children can tell each other about games they like, swap them easily, play them side-by-side and send messages to each other.

Peers were a big influence on senior children having mobile phones. When asked what prompted children to get a phone, the replies in the groups were similar:

Senior Girl 252 *Cos everyone else has one, and they’re like can I have your number and then you don’t have one, so....*

When asked how they would feel if they didn’t have a phone, a boy replied:

Senior Boy 560 *You’d stick out. You know like stick out from the rest of the crowd with phones.*

However, while this attitude to phones was evident in the Senior Mixed and Senior Girls Groups, the Senior Boys group, as was highlighted above did not speak of phones in this way. While this could be considered a defensive move to criticise something that they do

not have but would like to have, it points none-the-less to the lack of homogeneity within children's media culture.

With regard to making new friends on the Internet, the responses were mixed. Some of the younger children are on Club Penguin - a subscription website, where children create a virtual penguin to live in the South Pole. According to one junior girl, she had made friends with 100 people on this site and she only knows who some of the people are in real life. In the Senior Mixed Group, one boy who enjoys playing on games websites, talked about making friends with people he doesn't know when playing on-line games:

Senior Boy 560 *You can chat with people who are playing the games, you also have to chat to generate stuff like a plane or a helicopter or something or to just like on the generation button thing. And that's it.*

While playing games and watching television with friends and family were seen as enjoyable in some instances, some of the senior boys spoke about preferring to be alone because:

Senior Boy 285 *If you are with other people and you do something, they may say "oh no, what are you doing there?"*

Put very simply, sharing time on the computer with other people means they have less time:

Senior Boy 963 *Because, if there are other people you have to share it, even if you don't want to...so in other words you get half of the time.*

4.4.4 Research Objective 2d: Children's Perspectives on Media

In Chapter One, there was an exposition of some of the arguments relating to children and ICT. For example, we saw how some blamed mass media for the loss of childhood (Winn, 1984) and for provoking indiscipline and destroying healthy social bonds (Sanders, 1995; Meyrowitz, 1995). There were also opposing attitudes especially with respect to new digital media, such as computers and the Internet, that were viewed as raising

children's intelligence (Tapscott, 1998). The following section presents the children's own perspectives on the use of media.

Why do we have media?

The children were asked why we have media and the most common answer was that life would be boring without them. When asked what life was like before people had televisions, phones and games, one child responded:

Junior Girl 786 *Well they must have been like sooo bored. They might have just played some hopscotch, that's what they would've done. But now that we have media, our life it's just much better.*

When asked what would life be like without media, children answered:

Junior Boy 286 *Eh, mostly, eh it'll be boring because, you'll probably...when you have to go in for your dinner, if you wanna go watch some TV, there wouldn't be TV, you'd probably have to em...*

Junior Girl 118 *draw a picture?*

As mentioned in section 4.4.3, children's and parent's attitudes to computers are different. Where parents view them as socially important, children view them as fun. Children were also aware to some extent of the opportunities that media presented them for learning and spoke about how the Internet could be used to find information or how they could learn about animals from watching wildlife programmes on television. No child mentioned that computers might be important for employment opportunities in the future.

Violence

That violence on television, in movies, and computer games influences children negatively is an oft-touted negative side to children's media consumption. In each of the focus groups, the question "Can media be bad for you?" was asked, but it was only boys who highlighted violence in response to this:

Junior Boy 286 *[If] it shows loads of violence on TV like shows like real life and em cursing and em you learn them from TV...*

When asked if he learnt these things from television, he replied:

Junior Boy 286 *I think its funny. No sometimes I watch eh fighting and killing people. It's when I'm with my friends.*

In the Senior Boys focus group, one boy spoke about an experiment he had seen on television relating to children who play violent games:

Senior Boy 285 *Cos I was watching this thing and they put two boys in a room and dropped a crayon to a boy who was playing violent games and he didn't pick it up and the boy who was playing just like football picked them all up.*

MH *What did that show?*

Senior Boy 285 *If you play more violent games, you wouldn't care about what is going on around you.*

Senior Boy 379 *Like if someone watches wrestling and they have a fight, they will do the moves that show the wrestling. They'll try to kill each other.*

When asked if they enjoyed playing violent games, they were ambivalent but one boy answered:

Senior Boy 236 *They're too violent...You'll get addicted...Like, you won't be able to stop playing that and when you grow up, you'll buy a gun yourself and start killing people.*

Senior Boy 963 *And there was this child who was playing war games, he got a gun and he ended up shooting someone because he thought it was a game as well.*

Senior Boy 285 *It's like, if you were playing shooting games, you just want to shoot somebody, you'll get the urge and then one day you might go and shoot the person that you hate...*

Senior Boy 963 *Because you think its part of the game...*

The senior boys showed an awareness of the predominant arguments surrounding children playing violent games.

Peer Pressure

As was mentioned above, some of the senior children said there was pressure to have a mobile phone. When the girls were asked how it would be for a new child to come to their school and not have any of these technologies, they answered:

Senior Girl 454 *they probably would be like, people would always be slagging them.*
Others *Yeah...*

Senior Girl 252 *like you're poor*
 Senior Girl 454 *saying like you can't afford it*
 Senior Girl 127 *You'd probably be depressed like, sad or feeling sorry for yourself.*

It is interesting that for these girls the perspective is that not having a phone would lead to a child being ostracised. In contrast, however, the Senior Boys spoke about phone in a derogatory way, causing one boy to change his response from having boasting he had two phones to intimating that he didn't care. This illustrates the strong cultural element to having and using technology. How they are perceived depends largely on the social setting one is in. It is also a good example of how what is taken for granted by one group as being necessary isn't for another group in the same school. This could be a useful starting point in enabling children to reflect in a critical way on their media use.

Overuse of Media

The children also had opinions on the effects of overuse of media. These perspectives reflected some of the traditional views on the harmful effects of the media such as television or computers being bad for their eyes:

Junior Girl 786 *You see, my brother -----, he's fourteen and when he was little, when he was like our age or something, he was on the computer way too long and his eyes...so now he has glasses...*

Children also mentioned getting addicted to texting and playing video games:

Junior Boy 137 *They could get addicted to computer games.... Every time they get separated from computer games, they would just cry, "I wanna play computer games".*

Laziness and obesity were mentioned:

Senior Boy 285 *If you like sat...on the television and keep on eating, you could become really fat.*

In the Senior Girls Group, they agreed that is it not healthy to spend too much time with media. Rather:

Senior Girl 127 *You need to go out for air and like have fun, instead of just watching...*
 Senior Girl 252 *And keep active*
 Senior Girl 127 *Like go to the community centre and join stuff...like dancing.*

In this discussion, the children were aware of the predominant issues that are raised in relation to children's overuse of media such as laziness, obesity, becoming addicted and damaging their eyes. However, these were presented as third-person problems; in that they felt that they applied to other children. No child in any of the groups felt that they were addicted to, or overusing ICT in their lives. This is an interesting point in relation to listening to children's perspectives on their media use because while they show themselves to be aware of the predominant negative views of using ICT, it does not give any real indication of the extent to which these children may be experiencing negative affects.

4.4.5 Summary of Research Objective Two

As stated in Chapter One, debates around children's interaction with media tend to be polarised along two lines – that children are the front of developments or that they are at the back needing educational intervention. This exploration of children's has sought to understand better children's media culture and to underline the point that it is simplistic to occupy a position that sees media as totally good or totally bad, with children either as totally competent or totally inept. That children's media culture exists is proven. That it is changing and evolving is also evident. Where it has failed to become embedded in schools, it is apparently embedded in children's lives, experiences and relationships with themselves and others. While there is merit in wanting to incorporate children's existing knowledge into formal learning, one also has to acknowledge that we may need to be concerned about what children are informally learning and this will be discussed further in relation to critical media literacy in Chapter Five.

4.5 Conclusions of Chapter 4

Chapter Four has explored the views and experiences of children and stakeholders in relation to media and the Digital Age. This was intended to provide a context in which to discuss education in Chapter Five. Through the analysis provided in this chapter, a number of insights have emerged. Both the research objectives explored in this chapter foregrounded an understanding of the Digital Age that was based not on technology but on the people who use technology and how this affects their lives - from the IBM Executive who sees mastery over ICT as being the key to winning in the future, to the parent who is concerned over children being over-informed. Through the exploration of children's attitudes and experiences of using media, it is clear that these are not simply technologies for children but are embedded in their relationships with themselves and others. In this way, understanding the Digital Age and envisioning ICT in education, it has been established that "technology is only part of the story" (Buckingham, 2007, p. viii) and thus, for it to be successfully embedded in formal learning, it can only be *part* of the vision.

The second significant conclusion that can be drawn relates to the assertion "young people are expert users of ICT" and that we "need to find ways of incorporating these new skills and experiences into the formal learning environment" (DES, 2008a, p. 1). Given the discussion of children's media culture above it is evident that the 'digital generation' is not a homogenous group, and also that their use of ICT is bound up with their social contexts and tastes. Children's views of media in school and at home are different. To what extent this media culture can or should transfer to formal learning is the underlying theme of the final chapter. Essentially, the question remains that given the changes in society and children's interactions with media in the Digital Age, if learning is to change, how should this be done?

CHAPTER 5

5.1 Introduction

In this chapter the opinions and experiences of six stakeholders and experts, and also some findings from the children's focus groups, are used to explore the changes thus far in education and to envision the direction of change in the future. Research Objective 3 is concerned with perspectives on the use of ICT in education. It foregrounds the opinions of three interviewees who work in primary schools – a Teacher, ICT Post-holder, and Principal. This exploration of ICT in education is supported by the children's perspectives on their use of ICT in school. Research Objective 4 focuses on the concept of literacy in the Digital Age. The discussion features the opinions of the final three stakeholders – the Media Literary Expert, Literacy Expert and Communications Lecturer. The exploration of literacy can be understood as consolidating the findings in relation to the Digital Age, children's media culture, and ICT in schools and, in doing so, leads to the conclusions and recommendations of this work.

5.2 Research Objective 3: What is the Role of ICT in Education?

In Chapter Two, there was a detailed discussion of national, EU and education ICT policies. It was established that they represent a discourse of technological skill that joins together education, the market and the future worker/consumer where “technology is presented as the primary driver of social and economic change and as the solution to any problems it might cause” (Buckingham, 2007, p. 16). Presented in this way, Robins and Webster (1999) suggest, there is a “discourse of inevitability” where the conversation is about how to use technology rather than if it should be used, or for what reasons. To what extent the discourses prominent within policy are evident in discussions with people who work in education is the core question of this research objective.

How ICT is being and should be used within the everyday practice of teaching and learning was discussed with three interviewees - a Teacher, ICT Post-holder and Principal. All three interviewees work in large urban schools in Dublin. The Teacher has been teaching for four years, is completing an MA in Digital Learning and teaches Junior Infants. She works in the same junior school as the Principal, who taught for twenty-five years before becoming principal three years ago. The ICT Post-holder has been teaching for ten years, teaches sixth class in another school and has responsibility for promoting ICT in her school. The first section of this discussion outlines the conversations that followed in relation to the question of the role of ICT in schools in the Digital Age. The children's opinions and attitudes to the use of ICT in school were discussed in the focus groups and the relevant findings are also presented and discussed here.

5.2.1 Stakeholders' Views on ICT and Education

The Teacher

All of the interviewees felt that the perceived changes in the Digital Age had implications for education. The Teacher said that digital technologies presented significant opportunities for educators in terms of not having to "spoonfeed" children because they can find their own information. She described educational technologies as being engaging and great motivation. In relation to secondary schools, she mentioned that students could use, and create, blogs and projects on-line and, thus, be in more control of their learning. She also stated that:

in terms of teaching, it changes things for us because we have more ideas; its a wider network of teachers where you can share and collaborate an awful lot more. (Lines 13-15)

When asked if she felt schools were responding well to the Digital Age, she said that they were and that the grants available for schools to invest in ICT infrastructure indicated that

the “Department [of Education and Skills] is pushing it”. She also stated that schools were behind the trend and that industry leads the way while formal education comes after because in education:

you have to have tried-and-tested methods. You can't experiment with it. You can't risk a group of children going through primary school and at the end saying “oh that didn't work” you know? (Lines 23-25)

When asked what the barriers to ICT becoming embedded in education were, she mentioned lack of finance and also teachers who have a fear of technology, or who are unwilling to learn about it and just want to teach the way they have always taught. She acknowledged however that:

It's a massive undertaking if you never used a computer or you're not used to it, to end up with a computer in your classroom and an interactive whiteboard to be expected to integrate it into every lesson. (Lines 64-66)

She felt that in order to develop ICT in teaching and learning, it would be beneficial to have a specialised ICT teacher because not all teachers have the same level of skill or interest in using ICT. The Teacher was also asked about the underlying principle of the Revised Curriculum that states that children's learning should begin from their existing knowledge.

When asked if we build on what children already know with regard to ICT in education, she said:

maybe we even take them back a step. The children come in knowing so much about it ... But I think they don't necessarily know more about skills, they just have different skills and it is a good foundation if we want them to learn about Word and Excel.

When asked about the concern presented in ICT policy and reports about the failure for ICT to become embedded in formal schooling she responded that:

I don't think it should be integrated into every lesson...I think, if you wanted to find an angle you could, but I think there has to be a balance, they have to be away from a screen at times and we're trying to get back in education so that they can do more practical work, so it has to be a balance between both. (Lines 75-78)

The ICT Post-holder

The ICT Post-holder stated that the Digital Age had significant implications for education - both in the ways it can enhance education, such as addressing different intelligences, and also the ways it can be a “negative part of education”. By this she meant that some people are not discerning in the reasons and ways in which ICT is used in education. For her, this leads to a lot of time being wasted on doing things that are “cool”.

With regard to how education is responding to these challenges, she said that it depends on the school and that different schools, and individuals within schools, use ICT in different ways. This is similar to the Teacher’s point that how ICT is used in schools depends on individual teachers’ motivation and skills. Also, in a similar sense to the Teacher, the ICT Post-holder felt that the pace of change in schools is slow but that this is not a bad thing. She said:

It’s very slow to change. That’s not necessarily a bad thing in some ways because if you get so excited about something you can lose sight of what’s important behind it.
(Lines 20-22)

When asked about the barriers to ICT becoming embedded in schools, she mentioned finance and lack of equipment but also focused on teachers’ general lack of skills and understanding of how to use ICT effectively. Professional development was an area that she highlighted as being important saying that:

if teachers don’t know how to use it and why they are using it and for the right reasons, that’s going to hold it back (Lines 79-80)

The ICT post-holder is suggesting here that the kind of professional development that is necessary is not focused on technical skills alone but on ways to use ICT in ways that are in line with the curriculum.

As the ICT Post-holder, she has primary responsibility for the promotion of ICT in her school and this was a topic that she clearly had given significant thought to. When asked about planning for ICT use, she replied that her focus was not on using up one’s

computer room time allocation each week and that the attitude should not be that “we’re doing computers now”. In line with the ICT Framework, she felt that ICT should be used to help with particular lessons along with other resources and methodologies. She gave an example of this:

I'm doing World War I, in what ways can I enhance this? What methodologies will I use? We'll look up such and such books ... ICT will enhance whether it's a stimulus for introducing the topic, or whether its footage, or whatever (Lines 111-114)

Her perspective on using ICT in education centred on always considering the curriculum questions and focusing on what children should be learning and then using ICT to enhance that. Following a discussion of the Digital Age, the ICT post-holder was asked if she thought we were doing enough in formal education to prepare children to live in this society. She replied that she thought we weren't doing enough yet. Although she thought progress had been made, she said that:

I don't know if we are reflective of society. I think they are two separate worlds in some ways; that what they see around them at home and the tools that they use and the ways that they communicate, compared to in school, there is still quite a gap between them... (Lines 128-132)

For her, the central focus in preparing children to function in the wider world is giving them the skills to cope with the vast quantities of information that they are bombarded with:

What I would be trying to get across now would be about ... being discerning about knowledge, good knowledge or useful knowledge. What can I trust? What can I not trust? Is this useful or not to me? That kind of thing, I don't know if we are doing that enough. (Lines 138-140)

For her, this kind of thinking in relation to being discerning about knowledge very much links to broader issues about participating in society and is reminiscent of the discussion of literacy in Chapter Two. In addition to becoming discerning or critical about information she said it is important to consider:

what will help me in society here? What helps me function because, lets be honest, like anything to do with literacy and digital literacy is not just to do with being able to use a computer - its more powerful than that. I think it's more to do with where

you are in society and the more digitally literate you are, the more of a place in society you have. (Lines 140-145)

The ICT Post-holder's view of education with, and about, ICT extends beyond technical skills to include the non-technical side of using technology, such as having the motivation and critical skills to use it to one's advantage in life. This recalls the discussion of digital divides and social inclusion from Chapter Two. She also implies a relation between these skills and a person's place in society. This is a significant point to highlight and one that will be developed further below in the section on literacy in the Digital Age.

The Principal

The Principal felt that one of the key points about the Digital Age is not only the increased availability of information but also the immediacy with which information can be accessed. For her, a central concern was whether children would retain information and, as the following quote shows, this raises some fundamental questions about both learning and how society evolves:

Whereas I think for children now if they don't know something, they can find it out, but they don't necessarily need to remember because they can go and find it out again the next day because the information will always be there and its very immediate. From a teaching point of view, it's a great resource but from a learning point of view I think children are learning in another way and (pauses) I'm not sure where that will lead us. (Lines 12-17)

In a similar way to both the Teacher and the ICT Post-holder, the Principal was somewhat ambivalent about the extent to which formal education was responding to changes in the Digital Age. She also mentioned the uneven development due to different people having different levels of skill and interest. While reticent in her attitude to ICT in education, some of the discourse of rapid change evident in ICT policy can be seen in her reply:

it's going so far ahead of us that if we don't engage with it there will be huge gaps... (Lines 27-28)

When asked, as a principal, about her attitude to ICT use in her school, she replied that she was very much in favour of it. While she felt less skilled than other staff members, she was

open to being shown by others how to use it more effectively. However, she thought that schools might not be getting the “best out of it”. She also talked of a number of underlying concerns about what was best for children and society. For example, she questioned if sitting in front of a screen was a positive learning experience:

Is everything going to be delivered to them via a screen? And what does that do to the real experience? (Lines 47-48)

To illustrate her point, she spoke of children on wet days staying in their classrooms and watching films on interactive whiteboards. She described this activity as very “pacifying” and “calming” for the children, and pleasant for teachers who have to supervise, but ultimately she questioned the “value” of it. However, her attitude was not that technology is necessarily negative or should be avoided. She acknowledged that it is a part of contemporary culture, but that as educators we have a role to play in how it is used and how it may impact upon society:

It's a tool, you know what I mean? And we just have to learn how to use it and manage it, as opposed to allowing it to direct and conduct us you know? (Lines 98-99)

In a similar way to the Teacher and Post-holder, she was concerned about what might be lost from education in the Digital Age. She felt that as technology and culture became more individualised, we were in danger of losing the skills needed to collaborate. Also, just as the Parent said that using technologies could undermine developing social skills, the Principal was concerned with the interpretive side of communication. She spoke of not being able to “read” what people mean if they send a text as opposed to speaking in person. She, more than any of the other interviewees, seemed to be most unsettled about how the communications environment was changing. She questioned the extent to which people are listening to each other, in spite of the fact that we appear to be more connected to each other.

Policy and People

ICT education policy, as was shown in Chapter Two, is characterised by a sense of urgency and is credited with having the power to transform all aspects of student learning (NCCA, 2004). Reference was also made to Ball's assertion that policy documents do not enter into a social vacuum when they arrive at a school; rather they enter into existing patterns of inequality, and are read, interpreted and implemented in different ways depending on the collective and individual readings. What was most striking about these interviews was that the discourse of the ICT policies was different to the discourses of the teachers. There was no sense among the participants that education should necessarily be "transformed". In fact, all three stakeholders were concerned about protecting the integrity of Education; concerned about what could be lost. In relation to change being slow, ICT Post-holder said:

That's not necessarily a bad thing in some ways because if you get so excited about something you can lose sight of what's important behind it.

The Principal was also reflective on this point saying:

If you think we have children in this school for five hours a day ... what are we really doing? You know? What are we preparing them for? ... And I suppose my big thing always is it's the whole person and can they get on with other people, communicate, get on and ask for help if they need it, and help someone else if they need it, and think of a solution or be confident enough to try something or reflect?

What the Principal is speaking about are the social skills and the pastoral side of education that are not to the fore in ICT education policies. In essence, her point highlights that education is not only about the learning of cognitive skills but is about the "whole person". As education becomes more entrenched in discussions relating to markets and supranational tests implemented by bodies such as the OECD, there is a danger that this very human aspect of education will be sidelined. Interestingly, as the IBM Executive spoke about education and trying to get the best value for the investment that the State makes and the "winners and losers" in the Digital Age, the researcher suggested that there are many ways

to measure whether one is losing or winning. In response, the IBM Executive spoke about fulfillment but he asserted that:

I guess technology is not really trying to answer that question. Its not, there is no-one in my company that that is on their agenda, as to how fulfilled people are.

This is an important point to bear in mind as education concerns become more conflated with market concerns – that education cannot necessarily be measured in the same way as success within the global market place. It is important then to acknowledge the views of those working in education and their concerns over what may be lost in the transition to a more digitally enhanced mode of teaching and learning. The Principal felt that within education we should not to be focused only on technology:

So, I do think that we have to be careful that we still think of the mind when we are trying to teach ... while I know it's [ICT] there as a resource and tool and everything, its really back to the mind and if it all disappeared tomorrow would we be able to live or cope or think?

While the stakeholders were enthusiastic about using ICT in education, they were also sceptical of making changes in haste. These three stakeholders throughout their interviews were at times challenging the dominant hegemony of ICT education policy and this is a significant starting point in empowering the people who work directly in education to make change. Within the literature, people who are reticent about using technology are often described as being 'resistant' and as Buckingham (2007) asserted this is really an indication of the immaturity of the debate in this area. The concerns voiced by the stakeholders in this instance provided some insight into the complexity of using ICT in education and the effect of this on learning and children's development. They expressed a level of critical consciousness which is positive, but there is also a need to be able to use this critical consciousness to develop praxis.

All three of the interviewees conceded that we do not know enough about children's existing experience with digital technologies and that there is a gap between children's home lives and experiences in school. The section below outlines the children's views on

ICT in school and at home and explores with the stakeholders their perspectives on the idea that children are “cyber kids”.

5.2.2 Teaching Cyber Kids

Facer et al (2001) posited that, within discourses of the Digital Age, children are presented as being both at the vanguard of the digital revolution and also at the rear requiring educational policy interventions to ensure they acquire skills. The term cyber kid refers to how young people are constructed within popular discourse as having natural mastery of technology (Facer et al, 2001). While this relationship between children and technology can be seen as positive in relation to their future, technological prowess can also be seen as bringing children and young people into the adult world (Buckingham, 2000). The following discussion presents both evidence of the children’s perspectives on using ICT and also the stakeholders.

There was not a strong sense from the stakeholders that children should be considered cyber kids. The ICT post-holder stated explicitly that she did not believe children had an “innate” ability. She attributed children’s apparent affinity for ICT to being about familiarity; the fact that they are growing up in an environment where media are ever present, or that they have openness to learning new things in a way that older people do not. The Teacher replied:

I do think they have a more natural ability because they are born into it.

Children certainly exude a confidence when speaking about using ICT and the Teacher felt that this confidence is something that is of concern for educators who may not be as confident:

there is this fear of using technology in school that it will kind of run away from us - that they will be doing more than we know how to monitor and if you leave them off, you don't know what they are doing or what they are looking at...

Within the focus groups with the children, this confidence was evident at both age levels. For example, the children in the Senior Mixed group could explain how to upload music:

Senior Boy 997 *You buy a CD and you can put all your tunes together on your computer and then you hook your phone up to your laptop and decide what you want to put on your phone and then they are on your phone.*

When the children talked about using the computer, they spoke about it in a way that suggested they thought it was easy. When asked how they learned about computers children put it down to simply using them:

Junior Girl 786 *you just click on the bottom and it says "create a me-doll" and you like, you can click on which hair you want and which eyes and eyebrows and the lips and the nose and then you have to sign in your star doll name and whatever things you need for an account.*

For some children even encountering errors was not a concern:

Junior Boy 286 *I'm not like somebody else like em a person who doesn't care about computers, I read the thing, what it says and I press "cancel", "install" like if its something like ... antivirus ...*

Within the groups, the predominant way of listening to music was on a computer or a phone. This means that knowing how to download music or share files is an everyday skill; perhaps the equivalent of knowing how to put a cassette into a cassette player and press "play" twenty years ago. Taking into account the finding in Chapter Four that children use their phones as the primary way to listen to and share music, it appears that this skill will continue to develop.

Home versus School Use

It was established in Chapter Four that there is a difference in how children view computers in school compared to at home (Suss, 2001). This idea was not only found in the literature, as one boy said:

Senior Boy 285 *At home, you play with it and all, but in school you use it for information.*

The children's opinions of using ICT in school as opposed to at home were similar across all six groups. Home use was characterised by a large degree of autonomy and choice. This kind of use could be considered to be confidence building with children "learning by doing". In school, computer-use was construed as more controlled and limited. Some of the school games were criticised for being old-fashioned or for younger children. When asked whether they prefer going on the Internet in school or at home, the answer was unanimous - as one boy put it succinctly, home use is better:

Senior Boy 285 *'Cos you're not allowed on YouTube, which is the best thing about the Internet.*

The lack of freedom when using technology in school contrasts with how children spoke about their access to, and use of, media at home. There was evidence that children are often entrusted with technology within the family such as cameras and video cameras. In this excerpt, one boy speaks of having a video camera:

Senior Boy 963 *I use it sometimes, if we go to Church on somebody's wedding, we use it to take pictures or if we go to my aunty's house...*

When asked if it belongs to him, he replied:

Senior Boy 963 *It belongs to our whole family, but my mom makes me keep it.*

This trend of children being entrusted with expensive technological equipment was common in the groups. In the junior groups, children spoke about being allowed to use their parents' phones and experimenting with how they use them.

It is clear that children have a different view of their use of ICT in school as opposed to at home. When this was presented to the interviewees they had mixed views about it. It was acknowledged that there is a widening gap between school and home use of ICT with regard to the freedom and autonomy that children have. The ICT Post-Holder said that with her sixth class children she could see that:

To them, the world outside school is about the social networking, it's about using these tools as we would have just used the phone, talking - they are an extension of their hand... it's just their world.

In relation to this she said, as did the other interviewees that school is not supposed to be the same as home. Also, it would be incorrect to assert that children are not “learning” when they are using ICT at home, rather as this work has consistently highlighted the learning using ICT at home and in school may be different forms of learning.

Learning about ICT outside of School

As regards the question of children being at the rear of technological developments and in need of educational policy interventions, it would appear that children are learning some of these skills at home. The children were aware of various dangers, the most common being acquiring viruses. The children's responses indicated that this is something that had been discussed with their family at some point:

Junior Boy 028 *My dad always said, this lesson for me: If anything, he means anything, saying like “Congratulations you're the 105th person to be on this website, click here and get your prize” He said never ever do it cos it's a scam and then they wreck your computer and all, so like never ever click on them ok.*

For some children, the question of computers being “dangerous” was more of a physical concern - such as water spilling and getting an electric shock. Some children were aware that there was material on the Internet that was not suitable for them and this is in line with the findings from the EU Kids Online Report (2011). For example, one boy spoke about something that he saw on the Internet that he found disturbing:

Junior Boy 168 *...before when I was on the computer, there was something [like a] snake, a Jesus standing and then a bus ran over him and then there was blood coming out of him.*

MH *What did you think of that?*

Junior Boy 168 *I just turned it off.*

There were also other children who spoke about material that was not suitable and this was a topic he had discussed with his parents:

- Junior Boy 286 *Once you go onto something rude and you've checked the history and on my computer, you have history and em...*
- MH *So your parents can check what you've been looking at?*
- Junior Boy 286 *Yes.*
- MH *And what would they do if they thought you were looking at things that were not good?*
- Junior Boy 286 *Um, I would get in so much trouble.*

When the junior children were asked whose job it is to make sure they are safe on the Internet, the answer in all cases was their parents. When the Parent was asked about keeping her children safe online she spoke about being proactive and having a “Net Nanny” programme that allows her children to use the Internet safely. When it was suggested that some parents may feel their children know more about ICT than they do and so find it difficult to keep their children safe on-line she said that this was a “cop-out”. For her, a fundamental aspect of keeping children safe in a Digital Age means considering their on-line exploits.

In the older groups the children mentioned adults posing as children on social networking sites:

- Senior Boy 997 *That there could be this person pretending to be a child and you tell him where you live or anything and he'll come and kidnap you.*

This scenario came up in all three senior groups, which suggests that it had been discussed in school.

Incorporating Home ICT skills into School

Within ICT policy there is now an acknowledgement that young people “engage in a range of informal learning across a continuum of digital activity in ingenious and impressive ways” and this provides the impetus for education to “find ways of incorporating these new skills and experiences into the formal learning environment” (DES, 2008a, p.1). While this aim is laudable, there are a number of significant challenges that need to be overcome. Firstly, from the data presented in this research, children already view technology in school in a very different way to how they view it at home. Secondly, this

generation has a diverse range of interests and tastes when it comes to both what technology they use and why they use it. Thirdly, there is a significant divide in the range of skills and abilities that children and young people bring to school and unfortunately, it would appear that it is likely that children with “ingenious and impressive” digital skills will not be challenged as will be discussed in more detail below. Fourthly, we know relatively little about children’s and young people’s use of technology outside of school and there is an assumption that the ways children and young people are using ICT outside of school are uniformly positive - being described as ingenious and impressive. While this may be the case, it seems more likely, based on the exploration of children’s culture in this work and the EU Kids Online research, that children are using ICT predominantly for entertainment purposes dominated by pleasure and enjoyment and this may be at odds with how they are to be used in schools. Finally, there is no allowance for the fact that children’s media culture is a very engaging form of popular culture and there is a function for education to help children to become more reflective in their use of ICT.

5.2.3 Addressing Digital Divides

One of the aims of improving children’s access to ICT in schools is that it can address the digital divide between those who have access to ICT at home and those who do not (Smart Schools, 2009). However, as various discussions thus far have shown, the situation is more complex than ensuring children have physical access to computers. Access is also about motivation. The CCME (2001) study showed that children from higher SES background families are more likely to have computers at home and this gives them an advantage when they come to school. Similarly, in Facer et al’s (2001) study they found that there were children from lower SES families who were resistant to some ICT because they felt that they were for “brainy” children. However, the evidence in this study would challenge these findings, as the children are generally from low to middle SES families, and

yet all spoke of using computers and the Internet. Also, in contrast to the CCME study where it was found that children from lower SES families tend to be happier with ICT in schools, these children were not impressed with school technologies. It is posited that computers and the Internet are much more widely available in 2010 than they were at the time of the CCME study and rather than challenging their findings, the evidence in this research points to a more general increase in the access to ICTs in the present day.

The findings presented here corroborated Livingstone and Helsper's (2007) finding that there isn't a dichotomy between "haves" and "have nots" when discussing digital divides among children because all of the children in the groups use computers and the Internet to some extent. However, as Livingstone and Helper asserted in relation to Internet use, it is more prudent to consider "gradations of inclusion" – that is the nature of use as opposed to considering a binary opposition between users and non-users. In considering this aspect, especially in relation to their description of the various steps of use as shown in 2.3.5, it is possible that the existing class divides are still present.

Taking Existing Skills into Account

The principal also offered an opinion that was not to the fore within the literature or the other interviews. With regard to the difference in ICT use in school and at home, she said that perhaps the increased use at home would help with the teaching of it in school. For her this marked a possible new departure, as working in a disadvantaged area, one could not always depend on support from the home:

so maybe now the balance is going to change and the pressure will be put on us to do it, which mightn't be a bad thing.

When speaking to the Teacher about how she taught children with high levels of competence with computers in her class, she said that she paired these children with others who didn't have the same level of skill so that they "are teaching each other". This raises two contradictory possibilities for education. The first is that there is great emphasis in

primary education on building on children's previous knowledge and challenging them so that they reach their full potential. In this respect children who are coming to school with a high level of competence in ICT are being held back to teach their peers. As the Teacher spoke about this she concluded:

But the one who already knows, I don't know what he or she gets from the one that hasn't used one. So, I kind of have to hold my hands up and say I don't really bring them on any further if they already know how to use a PC.

Children helping other children, and in some cases the teacher, could be seen to represent a democratisation of relations within the classroom. It is common practice in primary schools to have peer-to-peer reading, or have older children read with younger children. This is a valuable experience for children, both the more and less able. However, it would not be the case that helping others to read would be the extent of a child's reading experience in school; they would also be reading and being challenged at their own level. While viewing children's prior knowledge and skills as positive is important and possibly represents a new perspective on power relations within the classroom, it seems unfair that efforts would not be made to enable the child with a high level of competence in using ICT to reach *their* full potential. This is one of the new challenges for education in relation to the Digital Age; that we need to challenge, engage and encourage those children who have a high level of ability.

5.2.4 Changing Learning

It is stated within the Report to the Minister that "learning is changing". This thesis has sought to explore this statement from a number of angles not least placing the question in the context of wider influences on education, such as globalisation, changes in policy and also acknowledging children's informal learning experiences outside of school. One of the defining features of the Revised Curriculum (1999) is that it "accords equal importance to what the child learns and to the process by which he or she learns it" (Introduction, p. 10). This implies that the experience of learning is as important as the content of what is learnt.

Thus, in order to explore if learning is changing it is necessary to consider changes for both curriculum and pedagogy.

Changes in Curriculum

The ICT Framework (2007) represents the vision for children's use of technology in school. Conceived of as an enabling framework for learning, it emphasises that it is not a "curriculum", a "syllabus" or an "add-on" to learning (p. 3); rather it is a tool to guide and enable teachers. However, it is included in this section of change in learning content because, in spite of statements within it to the contrary, it is difficult to overlook that it does represent new content for learning. In conceiving of ICT as a tool that can be used to support and extend learning in other curricular areas, the practice of teaching ICT skills in a decontextualised manner is discouraged and this is considered to be a positive approach. However, it is asserted that the Framework significantly underplays the level of change necessary to implement what it is advocating. Furthermore, when discussing this Framework with the NCTE Coordinator, it was agreed that without according the development of ICT skills some focus within the objectives of the lesson, or some explicit instruction within the context of learning in other curricular areas, the likelihood of children developing these skills and competencies was diminished.

The perspective espoused in the ICT Framework is, in ways, similar to discourses that refer to children as digital natives or cyber kids in that it undermines the idea that we need to teach children the skills necessary to learn through the use of digital technologies. However, as the EU Kids Online Report (2011) highlighted, Irish children, while apparently safe and confident users of the Internet, have on average four of eight digital skills, which is lower than the European average of 5.7. As the report states "there is still plenty of scope for adults – parents, teachers and so on – to teach and guide children's Internet use." (2011,

p. 55). It was the consensus of the interviewees that the Digital Age does require changes and additions to *what* children learn.

It is also suggested in the literature (Selwyn, 2001) that the technical skills that children are learning through using ICT are in fact a myth, that because computers are user-friendly, that they are picking up the basic skills anyway. When this was put to the ICT Post-holder she agreed and said that technologies are now almost intuitive. She also felt that the children were learning basic skills anyway. There was an underlying theme within her interview that saw change in education to be based in changing how we think about education and technology and this was evident in that she felt the emphasis should be on the social skills rather than focusing completely on technology such as:

SPHE[Social, Personal and Health Education] programmes, about how we relate to each other, how we communicate with each other, that sort of stuff... You don't necessarily need all of the technology in schools to actually equip them. Like they would have done fifty years ago equipping them with skills that were needed in society. I don't necessarily think that ICT has to be pushed so much more in order to do that either.

She also mentioned the technology lobby groups that continually call for more resources to be put in schools saying that:

IBEC and different unions saying we need them to know more about technology, its out there anyway, its not going away and education certainly can't turn its back on it either, but I think that we shouldn't be so unbelievably concerned that we are never doing enough.

The Teacher, on the other hand, disagreed with the suggestion that computers were user friendly and that children were learning skills anyway because she felt that children were using computers primarily for playing games and this didn't necessarily give them the skills to write a letter or use a spreadsheet:

They might be able to open up and close any program but can they write a letter and can they use the excel spreadsheet? It's more that just those skills but I do think that there is a gap between what you need day to day ... and what we do here in schools.

The principal also mentioned how she felt information was manipulated saying that:

Everything now is mediated. Somebody is controlling what we hear all the time, how we experience life.

She felt that there is a need to help children to be more critical consumers of information. For the principal, these concerns over communication were at the core of understanding what it means to be literate.

Teachers' Learning

Changes in what children need to learn can have a significant impact on how they are taught and, as such, the Digital Age represents an impetus for teachers to learn. As established above, teachers were mentioned as a possible barrier to ICT being embedded in education due to a lack of skills in using software, a fear of technology, and for having the perceived notion that children know more than they do. While the vast array of resources available on the Internet was praised by some of the interviewees, the ICT post-holder highlighted that teachers need to view Internet websites and software in the same way as they do textbooks – by consulting a wide range of textbooks in order to find the most suitable material for a lesson:

It's like looking through three or four text-books to get the best bits. It does take time to do that. But I think between online materials for your text-books, its bringing teachers from their comfort zone into a new way of thinking. (Lines 90-93)

It is generally accepted by teachers that mindlessly following textbooks is tantamount to letting the publishing companies dictate the curriculum. In this sense, the ICT post-holder is asserting that we shouldn't let software companies dictate the curriculum either. This may represent a step outside their comfort zone for some teachers according to the ICT post-holder, and as she stated this requires not just technical skills but “a new way of thinking”. The Teacher also felt that among teachers there is a:

fear of using technology in school - that it will kind of run away from us, that they will be doing more than we know how to monitor and if you leave them off you don't know what they are doing or what they are looking at and I think its slowly changing but its a perception as well, its a mindset as well, how you use ICT.

Both the ICT Post-Holder and the Teacher are emphasising not just the need for teachers to acquire technical skills but also for their perception and mindset about ICT to be changed too.

Changes for Pedagogy

The above section established that the Digital Age has implications for *what* children and teachers learn. It was also held that it has implications for *how* children learn. Within the literature and policies, ICT is praised as a tool that can enhance learning and motivate unmotivated students. The ICT post-holder spoke of using the interactive whiteboard with children to do a grammar lesson in Irish and how the children engaged with this unexciting exercise in spite of it starting to snow outside. She said:

it has effected them in that they know what they are motivated towards because they like what they see at home, they are rewards – “you can play the Xbox if you do whatever,” So, I think the way in which we are putting across information and their interaction with it is different because of the technology at home and they expect it, they crave it, they want it in school I think because that’s what they know.

Discussions about learning using ICT support two seemingly contradictory objectives. One is that children will be able to learn in a more personalised way and the other is that technology facilitates learning in a more collaborative manner. This juxtaposition of the individual and the collaborative is an interesting point to consider. The Principal was concerned that as technologies become more personalised, the communal and collaborative elements of learning could be lost. She said:

I think we’re losing that collaborativeness and I think as well its all about “me”, you know “I, I and I can have this..” (Lines 92-93)

What is most interesting about this supposed juxtaposition of the individual and the communal is that these concepts do not have to be placed in opposition to each other. The Revised Curriculum (1999), while celebrating the uniqueness of each child and aiming to take account of individual differences, also espouses the advantages of learning

collaboratively, claiming that it stimulates children's learning, exposes them to other children's perceptions and abilities and this helps to broaden the individual's learning as well as facilitating their social and personal development. One of the positive characteristics of digital technologies is that in order for children to engage fully with them this may require more, and better, collaboration other children.

In her work 'Scaffolding Internet Reading with Struggling Readers' (2010) Dwyer put children in groups of three to work on Internet-based tasks and found that social learning was of great significance in applying and developing online reading skills and strategies. Furthermore, online literacy instruction was found to require a *greater* reliance on collaborative learning because students model strategies for each other, learn through reciprocal exchanges, and teach one another. This represented a shift from the teacher-as-teacher to the student-as-teacher because in the active and collaborative learning environment of real time learning on the Internet, children effectively teach each other. In this way, this kind of learning could be considered relevant to Freire's (2008) view that education should not happen from the top down but from the inside out as highlighted in Chapter Two. However, this could also be seen to represent a change in the power relations between the children and the teacher. The interviewees highlighted that the teacher has never been the "fountain of all wisdom", but in the Digital Age, in some cases the teacher is not even the expert and this may present a challenge. The ICT post-holder said she could understand why teachers felt that their authority could be undermined in such circumstances. She felt that with confidence, the teacher could guide children in their learning even if at times they had to admit that they didn't know something:

I think when you look at what a teacher is and what a learner is, it requires confidence on the part of the teacher, not just for using the tools but for knowing within herself or himself, this is my job and that is what I am supposed to be doing.

5.2.6 Summary of Research Objective Three

The discussion with the stakeholders in relation to ICT in schools is valuable and insightful for two reasons. The first is that the discourse of the teachers is not the same as the discourses of ICT policy that were established in Chapter Two. While these policies envision ICT transforming learning through the use of ICT as a tool that can add value, the three stakeholders see ICT in a less transformative light. However, they were beginning to ask much more fundamental and radical questions about how the Digital Age may impact on the very substance of what should to be learnt and how. As the principal said, “*what are we really doing? You know? What are we preparing them for?*” the implication being that if the Digital Age is a period of change and transformation, then to what extent does the core of education also need to be transformed.

The stakeholders featured in this section were also mindful of what may be lost in the transition to a more digitally influenced education highlighting in particular the human interaction between children and also between the teacher and the child. This highlights Ball’s (1994) assertion that policy documents do not enter a social vacuum when they arrive in schools but instead are read, interpreted and implemented by individuals and groups who have existing opinions and ideas. In relation to the question of why ICT has failed to become embedded in the everyday practices of schools, it would appear that in order for this to happen there needs to be more coherence and common ground between the policies and the people who are charged with their implementation.

The second point relates to the children’s perception of ICTs in school. Assuming that children are innovative and creative users of ICT, neglects to understand that while this may be true for some children, it cannot be true for all. There is a danger of oscillating between a position that ignores children’s experiences to one that assumes that they know more than they do. While the evidence shows that children are generally confident about their use of ICT, the perspectives of the stakeholders were not that this is a digital

generation, born with innate skills. Rather there is an acknowledgement that they are comfortable with technology, which suggests that this is an area that has the potential to be developed. However, as the discussion highlighted, there may need to be some level of differentiation because not all children come to school with the same level of skill.

Thirdly, this discussion highlights the issue of digital divides and the role of formal education in ameliorating them. The close linking of debates about digital divides with concerns about social inclusion and participation in society has implications for education also. In relation to enabling children to participate in society, the ICT post-holder proposed that there needs to be an emphasis in education on:

what will help me in society here? What helps me function because, lets be honest, like anything to do with literacy and digital literacy is not just to do with being able to use a computer - its more powerful than that. I think it's more to do with where you are in society and the more digitally literate you are, the more of a place in society you have. (Lines 140-145)

Thus, it is posited that on the strength of the evidence from both children and stakeholders presented in the work, that there is a significant area of discussion that is largely absent from ICT policy and that is the concept of critical literacy. While technical skills are integral and using ICT in the context of other curricular areas can be viewed as positive, what the stakeholders and children have highlighted is that children are already living in the Digital Age, and a focus on literacy is seen in this work as being the route to enabling children to be active learners and citizens in the Digital Age, both as children now and as adults and workers in the future.

5.3 Research Objective 4: What constitutes literacy in the Digital Age?

While the fourth research objective is an area of exploration in its own right, it reflects, builds on and consolidates the findings of the previous three research objectives. Firstly, it has been established that the information and communication domain has

changed. The discussion with the stakeholders highlighted that this represents challenges for the State and formal education. They highlighted the need to challenge how we think about technology and society, what concerns we have for questions relating to human interactions and also the importance of developing both technical and critical skills. Secondly, the evidence supports the assertion that children are growing up in extensive media environments with a media culture that permeates their relationships with themselves, other people and society. While children appear to be competent, enthusiastic and somewhat critical users of technology, it is also prudent to consider possible unintended effects of rising levels of media-use among children and the wider role of education in equipping them to live in the Digital Age. The discussion of digital divides, and its close connection to social exclusion concerns, highlights that technology cannot provide a quick fix for pre-existing problems and in some cases can exacerbate divides. However, it is espoused in ICT policies that ICT can be appropriated to improve participation and social inclusion. While technological equipment and skills are acknowledged as important, the existing research and literature, in addition to the findings and discussion presented here, point to the need to develop critical and interpretive skills in relation to information with which to participate in the Digital Age. These skills are understood within this work as constituting what it means to be literate in the Digital Age.

The objective of the final element of empirical research is to explore with three stakeholders their perspectives on literacy in the Digital Age and how this might be fostered in education. In this section, the views of a Literacy Expert, Media Literacy Expert, and Communications Lecturer are considered. All three interviewees work in third level institutions in Dublin. The Literacy Expert works with pre-service and in-service primary school teachers in the area of literacy. The Communications Lecturer works in a large university, lecturing in communications, film and visual literacy. The Media Literacy Expert has a long association with media education in Ireland and is involved in research in

this area. With regard to the critical and cultural theory perspective of this work, these three interviewees were particularly critically conscious about the relations of power and knowledge in society and the role of ICTs in perpetuating these. Their responses repeatedly focused on the need to develop critical skills in relation to the use of new media in schools and education in general. The discussion begins by outlining the responses of the three stakeholders to the question “Has what it means to be literate changed in the Digital Age?”

5.3.1 Has what it means to be Literate Changed?

The Literacy Expert

The Literacy Expert was very enthusiastic about the changes and possibilities that ICT could bring to education. She saw a fundamental opening up of education with:

this idea of the classroom beyond the four walls of the actual physical building to very much a global classroom (Lines 9-10)

For her, this exciting change was as relevant for teachers, lecturers and researchers as it was for children. As a literacy lecturer, she was particularly concerned with the concept of reading. However, hers was not a narrow understanding of reading that focused solely on reading books. She was enthusiastic and aware of new possibilities and challenges that reading in an online environment may present for educators.

She described the Internet as an “n-dimensional space, a room with a billion doors” and highlighted that when two people go online to read, they are unlikely to read the same material in the same sequence. From this perspective, she suggested that there is a significant shift in how reading happens saying that in an online environment:

the reader rather than the author for the first time is actually constructing their own reading path through the information and they are reading in a non-linear manner. (Lines 57-59)

This also represents challenges for teachers, as they cannot predict the path children will follow when searching for information. This means that teachers need to focus on giving

children the new skills necessary to cope in this “n-dimensional space”. While she acknowledged that reading on-line still requires the core skills and these are important, she also highlighted the new challenges that this presents for a reader describing reading in an online environment as being much more complex. In a vast information space, such as the Internet, she said that one needs a high level of meta-cognition and self-regulation in order to choose what hyperlinks to follow. With hyperlinks, the information is hidden under the hyperlink, so the reader has to infer from the links what will be the most beneficial. She asserted that these kinds of decisions require the reader to have a significant level of prior knowledge, to pick up information as they proceed and this involves building “schema in the moment”.

When asked if she felt that what it means to be literate has changed, she replied that literacy represents one of the biggest changes in the Digital Age. She thought that we had not grasped yet what this means and made reference to the idea that rather than *being* literate, we are in a constant process of *becoming* literate. In this guise, literacy could not be seen as a fixed set of skills that one acquires, rather it is a process of learning, adapting and contributing to the changing information and communications environment.

The Literacy Expert also highlighted that what constitutes literacy is expanding to include new literacies including visual literacies and what she described as “the out-of-school literacies”. In a similar way to when the Principal asserted that we are not legitimating new ways of learning that children are using, the Literacy Expert highlighted that the Better Literacy and Numeracy Draft Plan did not take new literacies - both what children are learning in school through using ICTs and also at home - into account. She also said:

I think one of the biggest difficulties at the moment is well the digital literacies are not in the curriculumwe need to move on from that to even some of the literacies that the children are using at home.

When asked what the new skills we need to be teaching are, she consistently spoke about critical skills and higher-order thinking. She viewed these as being crucial in helping children to use ICTs to find and create information:

We don't even teach them how to find information and what to do with it when you actually find it and ... how do you communicate it to other people? And these are all life skills that we need; to problem solve; to work in groups; to collaborate. These are vital life skills now, we are not teaching them any of those. So, to me the curriculum needs to move towards that.

While the Literacy Expert was enthusiastic about the opportunities inherent in the Digital Age for education, it was also clear that she felt there were many ways that curriculum and pedagogy had to develop and that having technology in classrooms was not sufficient.

The Media Literacy Expert

The Media Literacy Expert also mentioned the need to develop curriculum approaches with teachers so that they could learn how to better teach digital and media literacy in schools. He was concerned about how media education had failed to develop in Ireland over the past twenty years. He spoke of the 1980s when there was talk of transforming education and that UNESCO was compelling governments to incorporate media literacy programmes into schools. In Ireland he felt that it had only happened in a piecemeal way but that it is more relevant today than ever because in the current:

media environment all of the kinds of pressures and influences have accelerated
(Lines 38-40)

When asked why media literacy, after it had been identified as an important element of education, failed to be fully adopted in Ireland, he responded that in addition to there being a lot of educational change at the time, there has also been a conservative approach to education and curriculum change in Ireland that has tended to “leave media out in the cold”. In spite of the lack of emphasis on media literacy thus far, the Media Literacy Expert nonetheless felt that there are still many reasons that we should develop this area more. He spoke of the importance of indigenous arts and culture programmes in Ireland, highlighting

that we have international respect for our culture and heritage and asserting that we need greater political impetus to support these creative industries. As someone working in third level education, he said that this influences higher education in terms of thinking about the potential for creative and cultural industries and the need to develop, in our young people, the skills to be critical and creative users of new technologies.

When asked if an ICT Framework that focuses on using technology to support other areas will ensure the necessary critical lessons are learnt, he was reticent in his answer. He referred to attitudes to media education in the past that have considered media as being “transversal, they inform, they cut across” and in this viewpoint, they require no explicit training or learning. In many ways, this view of media literacy is similar to the attitude to ICT that sees it as a “tool” to enhance other curricular areas. In relation to digital skills, he spoke of how recent reports show that children do not have a lot of the basic skills that they are assumed to have. He felt that there was an opportunity for education to intervene and agree on the skills that every child should have and teach them directly. With regard to teachers, he felt that there was scope for professional development. He said that it is unlikely that most teachers are lagging behind what children know but:

There are techniques and there are ways of learning about how to apply technology and how to use it in productive and creative ways and people have to work out strategies on this, its not ready-made. So, obviously more work needs to go into that kind of thinking.

One of the core points of this thesis is that ICTs are media and as such, teaching and learning using ICTs, requires not just technical skills but also the kinds of critical skills that are needed to access, analyse and create any form of media. These areas are still treated as largely separate - with media literacy, digital literacy and print literacy being conceived of as distinct areas. When asked about this he replied that:

I think one can focus on skills at the exclusion of critical thinking. But given convergence and this is convergence in everyone's lives around these kinds of things, that really comes to the fore again and highlights the need somewhere in the education curriculum that we need to focus on questions of content, critical analysis,

about understanding structures, messages, communication, all of those kinds of things regardless of what medium its on.

While literature and policy acknowledges convergence, there is little convergence of various literacies and as the Media Literacy Expert highlights, these distinctions could be undermining the fundamental critical abilities that need to be fostered in relation to all media texts whether they are books, films, songs or paintings.

The Communications Lecturer

The Communications Lecturer highlighted that the communications environment was changing and he felt that this had repercussions for how we understand literacy. He was interested in how various media forms were influencing each other and converging and wondered if that created a new “grammar” or “language”. He also felt that it was important to acknowledge that with various developments in ICT, in many ways how children and young people are interacting with media is changing. With regard to the level of change he stated that:

we don't know where we're at. Are we at the start? Or is this going to go the same or is it going to escalate more so?

In acknowledging the level of change in children's media environments, he stressed the importance for educators to remain aware of changes. He felt that there was a gap between how children are learning in school and how they are interfacing with ICT outside of school. Children's use of media is pleasurable for them and he felt they should be given the tools with which to develop their understanding of this and reflect on it. In this way, they would be taught new ways of expressing themselves. He also spoke about using film and literature as ways to discuss subjects such as ethics, or various social issues, and was very much of the opinion that many forms of media could be used to stimulate interests asserting that:

it's a good context for framing the voice and kids get in pleasure mode and then you can break down barriers and get into really thinking and dialogue and whatever, so it's a very good tool for getting into that.

He argued that simply giving children a laptop will not empower them to become more literate and described programmes that focused only on providing technology as being “driven by a technological agenda”. He felt it was important to have ICT for children to learn with and about but was concerned about the “fetishising of technology” where the technology is the “be all and end all”. He said that elearning is a buzz-word but that it is impossible to keep up with the latest technologies and so they shouldn’t be the focus.

Whether there is ICT or not, we must always remember that:

each learner has different needs and different capabilities and, as we say, cultural competencies and learning competencies and playing with that and mixing and matching is always the best, I would argue.

In a similar way to the Media Literacy expert, he lamented the failure of media literacy to be fully developed within education in Ireland, arguing that it was seen as a legitimating “working-class pleasures” or inspiring “left-wing radicals”. He said that it is seen as a “politically loaded concept” and felt that its development had been hampered because:

In Ireland we never got on that game, we just kept it as a part of the English curriculum in a very “literate” way but yet it’s what the kids really need. They need to know how to interrogate the media, they need to know, politicians, how do you believe them? How do you read them? How do you understand society? How do you make people better citizens? (Lines 27-31)

In relation to teachers, the Communications Lecturer also felt that critical media skills were “under provided” for teachers and suggested that they should be a part of initial teacher training. In a similar way to the Media Literacy Expert, he stated that there is an assumption among the “intelligentsia” that media literacy is all “common sense”, but he asserted that it does need training.

5.3.2 Back to Basics?

The vision of literacy as presented in the *Draft Plan to Improve Literacy and Numeracy* (2010) has been criticised for not taking full account of changes in the Digital Age (NCCA, 2011). It could be claimed that, at present, literacy education barely takes

notice of technological changes from the last century let alone acknowledging the developments in this century, in that it is so focused on the technical skills related to print literacy (Buckingham, 2007). Interestingly, some of the discussions relating to new pedagogies or understandings of literacy were met with a negative response by the interviewees, as if to imply that implementing something new or making changes means that the old ways of doing things will be lost. The Parent for instance, at the suggestion that what it means to be literate has changed and is now more about images than words, replied:

since Adam was a lad we all learn to read. I mean they learned to read off stones, they learned to read off pages... I just think that's commercialism. I think that's just people trying to convince us that it's all moved on but I don't think it has. I think the basics are still the same (Lines18-21)

This view is indicative of a tendency to polarise the debate and suggest that acknowledging changes implies that the foundational skills are not needed any more. There is also concern over standards of reading as the recent PISA Report saw Ireland's reading standards slipping. The Communications Lecturer said that using the Internet can have a negative impact on writing skills or the ability to conceptualise beyond bullet points and byte size information. He also acknowledged however, that ICT is a fantastic facility for finding out about things and so for him, the challenge for education is to marry the two of these together. This also connects with the PISA findings (2011) in relation to digital reading that saw print reading and online reading as being closely linked and influential on each other.

All three interviewees spoke about the importance of developing foundational literacy skills, but highlighted that new skills are necessary now. For example, the Media Literacy Expert said:

I think fundamental literacy skills remain as a bedrock as much as they always were and it is the ability to communicate through whatever language is available; its just that the range of languages is now so much greater The challenges are often still the same, they are about engaging, understanding languages, being able to use them effectively, developing critical skills, but you know there are perhaps different skill-sets and there is more demands certainly for teachers.

When new media are discussed, there is often a concern that other media will be displaced, and this has long been an issue highlighted in relation to children using new technologies and losing interest in reading books (Beentjes, 2001). The close relation between reading online and offline, however, could indicate that traditional literacy skills are still of great significance but that perhaps what is understood as “the basics” needs to be expanded.

5.3.3 Multiple Literacies

Within the literature review, it was established that it is necessary when considering literacy to acknowledge that there are multiple literacies and particular reference was made to the ‘Multiliteracies’ conception of literacy. This term refers to the plurality of literacies at two levels – firstly, the multiplicity of communications channels and media; and secondly, the many layers of cultural and linguistic diversity that influence how we interpret and communicate (Cope & Kalantzis, 2000). The interviewees acknowledged the multiplicity of channels and media through which we now communicate. Firstly, the Literacy Expert spoke of the need to help children to develop visual literacy and concluded that:

literacies are now multiple literacies. You need so many different forms of literacy to read on-line and we really need to think about that.

Secondly, the Media Literacy Expert fully acknowledged the multiple layers of cultural and linguistic diversity and made the link between this understanding of literacy and the wider context of participation in society that was a prominent theme in the discussion of digital divides. He felt an understanding of literacy requires:

an understanding outside education. It's a broader societal understanding and that's where we see it reflected in different kinds of policy discussions about the information society and for citizenship in general.

In seeking to implement an understanding of literacy that addresses citizenship he acknowledged the need for digital skills but emphasised what he considered to be the fundamental meaning of literacy:

A form of media literacy is required and often this is translated into certain kinds of digital skills but fundamentally it is about literacy - enabling full participation within society.

The Communications Lecturer spoke about using the teaching of critical media literacy to empower children and students. This kind of reflective learning could enable learners to consider modes of representation, culture and context so that literacy didn't have to concentrate on language alone. He also felt that for the teacher to enable these kinds of learning situations, they had to learn about what children like, what their answers to and readings of various media messages are. In a sense there is a need to understand children's media culture. In this way he sees literacy as being co-constructed with the learners and there is:

rejuvenation and that re-connection and cross-connection of literacy so its not a given, a pre-given [that] we give the literacy to the new generation. (Lines 64-66)

Luke (2000) asserts that due to the global cross-cultural information flow on the Internet and the increased international composition of many virtual communities, "any critical technological literacy by definition entails intercultural communication ... new ways of thinking about and interacting with others from culturally divergent backgrounds (p. 73). This relates to both communicating for work and leisure. In Chapter Two it was highlighted that the vision of literacy advanced in the *Better Literacy Plan* (2010) does not address the level of cultural and linguistic diversity in Irish schools. This is a reality for preparing children to live in the Digital Age. The IBM Executive spoke of the global working environment and the Literacy Expert spoke of her own experience of working on research with professionals in other countries. She highlighted collaboration as being a skill that is of increasing importance in a Digital Age and felt that using ICT for learning presented many opportunities for children to work together.

5.3.4 Critical Literacy

One of the core ideas proposed in this work is a reconceptualisation within educational discourse that ICTs are media. They are technologies of representation (Buckingham, 2003) and it is when they are considered to be media that their link to the broader conception of literacy becomes more apparent. As technologies they require technical skills, while as media they require literacy and interpretive skills more similar to those required to read a book. As stated in Chapter Two, “[I]t is this engagement with text that distinguishes information and communication technologies from other technologies – which is why we call a competent user of the washing machine or car ‘skilled’ but not ‘literate’” (Livingstone, 2003, p. 17). The discussion in Chapter Two highlighted two theoretical understandings of literacy – the autonomous model and the ideological model (Street, 1984). All three interviewees understood literacy within the ideological mode – that is that literacy is a social practice that is culturally embedded (Street, 1984). As mentioned above, the Media Literacy Expert acknowledged that literacy should have an understanding outside of education and should enable full participation in society and this means:

we need to focus on questions of content, critical analysis – about understanding structures, messages, communication, all those kinds of things regardless of what medium its on.

His final comment that these lessons are necessary regardless of medium suggests that literacy should not be solely focused on books or print.

One of the core skills in being able to interact with a “text” is to have the critical skills to interpret and make sense of it. The need to develop children’s critical abilities was asserted by all three interviewees. The Literacy Expert emphasised this point on a number of occasions. She spoke of being on the Internet and having:

to read with a critical eye, you have to be a critical thinker, you have to have what I would call a “healthy scepticism” about the information that is presented on-line because anyone can put anything on the Internet. (Lines29-31)

These critical skills are necessary when navigating the information space on the Internet, making choices about which hyperlinks to follow, and knowing if the information could be trusted.

Both the Communications Lecturer and the Media Literacy Expert spoke about the need to enable learners to be critical and reflective on the wide range of media texts that they engage with and enjoy on a regular basis. In other words, learning to be critical is not simply about recognising a spoof website, but also about interrogating other issues relating to how content and meaning are constructed. It is about understanding that our reality is framed within the horizon of the dominant ideology (Hall, 1977). As Jewett writes “[B]eing critical means studying critical issues” (2007, p. 159). The Communications Lecturer, as mentioned above, saw media literacy as a politically loaded concept and suggested that critical skills are vital in order to “make people better citizens” but that attempts to incorporate these skills into formal education have been hampered either by conservative attitudes or by a belief that they are “common sense”. The Media Literacy Expert spoke along similar lines and, in relation to having critical literacy skills, he warned that:

These are by no means widely held skills and we are in danger of creating a very passive and unskilled digital generation, which is kind of curious because we don't always think about that.

While it is the aim of the ICT Framework that critical skills be acquired through the use of technologies, it was not assumed by the participants that this would happen organically. There was an underlying sense that it is necessary to enable children to be discerning consumers of information and that this should be taught more directly and more consciously.

Encouraging people to be active citizens who are able to critique and appraise the affairs of State would seem to be a very worthy mission for education and would serve to improve the democratic functioning of the public sphere. While the rhetoric of the Digital Age is that we now live in an information society, as was shown in the review of literature,

the extent to which we are better informed is not without question. For, as Schiller (1996) proposes, the predominant area of increased information flow for the general public is in the area of entertainment. There is also a huge volume of information and this can obscure the more essential or relevant information. These debates represent challenges for education that are not to the fore in discussions of ICT. That media literacy can help us better understand the social and cultural processes involved in children's engagement with ICTs is recognised as being beneficial. It is asserted that media literacy "can form part of a strategy to reposition the media user – from passive to active, from recipient to participant, from consumer to citizen". (Livingstone, 2003, p. 3)

5.3.5 ICT Policy and Literacy

ICTs are understood as simply adding value to current curricular areas. The concern with viewing ICTs from this perspective is that it ignores the social and political spheres and the power that is at work through representation (Buckingham, 2007). Many ICT policies regard the computer-to-child ratio as the yardstick for how well we are responding to the Digital Age in education. In essence, it is easier to count computers than it is to measure children's critical abilities, but a suite of computers can be taken to signal no more than physical access to computers. As the Literacy Expert asserted:

The analogy that I'd use is that children are surrounded by books, print books, from the time that they are born or they should be in some way. They are surrounded by text of some kind and yet we still, as teachers and educators, think that we have to teach them how to read. Now they are surrounded by technologies but do we not have to teach them how to use technologies effectively?

As stated above, the Communications Lecturer felt that the introduction of ICTs into schools was driven by a technological agenda. The Media Literacy Expert highlighted a similar point but rather than being critical of the technology industry, he felt that education was failing to follow through and make the most of these opportunities. When the technological determinist stance was rejected at the outset of this work, it was because in

taking the determinist perspective, one expects technology to change and influence and this ignores the autonomy of individuals and groups to use ICTs to their benefit, and the benefit of society. As Buckingham wrote, technology is only “part of the story” (2007, p. viii).

One of the conclusions of the literature review was that understanding literacy, ICT literacy, digital literacy and media literacy as distinct and separate areas as opposed to interconnected and part of the process of communication, is that it ignores the context and connectedness of these concepts. This has repercussions both for how we conceive of literacy and how to develop it in the future, but significantly it also has repercussions with regard to the allocation of resources. The Communications Lecturer, for example, said that it is easier to get funding for ICT-related courses than Media or Literacy because grants are subsidised by technology companies. He then went on to comment that:

I would see that from English literacy to numeracy to ICT literacy it's all a continuum. They're all pretty much interconnected and ... we emphasise certain ones because we come from specialities. (Lines 18-20)

In addition to the barrier of different specialities he said that another hurdle is that the:

visual manifestation of ICT literacy is the computers whereas the visual manifestation of normal literacy is just the children's heads that they're able to critically engage... (Lines 14-17)

This point is significant and it is also relevant in relation to teacher's professional development. There is no easily quantifiable end product to show for the investment. Considering the discussion in Chapter Two in relation to education policy and how it has been closely linked with markets and employability, productivity and the wealth of the nation (Ball, 1999; Carter & O'Neill, 1995), it becomes more apparent why the less visible and more qualitative aspects of education are not to the fore.

This also relates to Freire's concern that in training people to be specialists in a particular area, they are separated from the total project and this undermines the development of a critical attitude to the whole project. He called this “excessive narrowing of a man's specialization” (2008, p. 31) and the logic of his argument can be extended to the

topic of this work. As long as literacies are considered separate areas of specialisation, and have to compete in order to get funding, this undermines the development of an understanding of the whole process, of the context, and thus possibly the opportunity to develop a broad critical understanding.

Teaching Literacy with ICT

ICTs can be used within everyday schooling in two ways - as a tool to support other curricular areas or they can offer *new* learning experiences. Smolin and Lawless (2003), for example, highlight that there is a significant difference between using ICTs to enhance how we already teach literacy and in adopting a “broader vision of literacy instruction” (p. 570). The Literacy Expert highlighted this point and she was critical, as was the ICT Post-holder in the section above, of using ICTs in a “very surface way” such as:

integrating technology tools into literacy... doing a writing workshop and using the word-processor to do it rather than hand-writing

Using ICTs in this way does not reflect the new opportunities and capabilities of technology. As an example of what she considered good practice she spoke about a teacher who was teaching using the Language Experience Approach (LEA) and:

she has built on-line books with the kids and they are putting in their own images, they are putting in their own text. We developed these little avatar coaches that come up with prompts for the children, now thats a totally different way of doing LEA and you can publish these on-line so that other teachers can see them. So its very much a way of accomodating the technology into literacy and enhancing literacy...

Teachers have been mentioned in the literature and also within the interviews in this work as being a barrier to ICT becoming embedded in everyday learning. As mentioned at the beginning of this discussion, the Literacy Expert felt that the Digital Age was an exciting opportunity for both teachers and learners. She felt that teachers needed professional development training with respect to using ICT and literacy. In her experience of working with teachers, she found that:

If something is working teachers will buy into it and they know, they can spot quality learning that is going on.

She said that the curriculum – both what and how children are learning – should be changing. She said that when ICT policy was introduced a decade ago, it promised a revolution that never happened because computers were simply put in schools and change was assumed to happen by “osmosis”. In her understanding the route to change is to help teachers to develop, to design and be creative in their teaching and she saw this as being exciting for education, children and also teachers:

its not a question of discarding everything that we know is good in teaching literacy but its about not being afraid to evolve as a teacher as well and I think that it is very important that you wouldn't become stagnant in what you do as a teacher...

Teaching Critical Media Literacy

In Chapter Two, there was a detailed discussion of critical media literacy. As the NCTE Coordinator highlighted, teaching a critical thinking skill in relation to mathematics is not necessarily the same as teaching a critical literacy skill. Critical literacy means talking about critical issues (Jewett, 2007). This refers to the ideas at the core of this work about power, ideology and legitimation. It starts from what children already know and aims to develop a reflexive style of teaching and learning where students reflect on their tastes and on the texts that have meaning for them (Buckingham, 2007). The Communications Lecturer spoke of the need to help students in their first year of university to think and trust their own opinions, to find their own voices. He also spoke of:

teaching ethics using film and literature and you can use film to teach anything because it can be a stimulus that can sell the debate, that then you can use the language to interrogate and... to just set the ball rolling

What the Communications Lecturer is speaking about is developing critical media literacy and he sees this as empowering and meaningful for the students. However, if he feels that this is something that needs to be developed in University, then it is implicit in his

comments that this is not something that is developed at the earlier stages of education. As Buckingham (2003) asserts, critical literacy not only reflects a new way of learning but also a new conception of what should be learnt. In this way, critical literacy can speak of critical issues of power and justice and to move from an education of “I do” to an education of “I wonder” (Freire, 2008). *Literacy training is not about a predetermined position but the creation of positions.*

Critical Media literacy is also a creative enterprise. One of the criticisms highlighted in the earlier section of this work is that the definition of literacy as supplied in the *Better Literacy and Numeracy Draft Plan* (2010) was that in the brief reference to new technologies, there was no mention of nurturing the learner’s capacity to create focusing only on the capacity to “read, understand and critically appreciate various forms of communication” (p. 9). If critical literacy is to be considered an integral element in fostering inclusion and participation in society, then having the skills to create content, to contribute to the discussions through whatever media, is of crucial importance.

Within our curriculum, there is already significant emphasis on developing the individual’s abilities to write creatively. One of the core elements of the English Curriculum (1999c) is developing children’s writing abilities as this is considered to enhance personal, social and vocational experience. The process of expressing thoughts and feelings is seen to help clarify concepts, explore emotions and ultimately contribute greatly to cognitive, emotional and imaginative development. In this sense, the ability to write is presented as something that far exceeds technical skill. When we consider the multiple platforms now available to enable children’s expression creating content using ICT, it is questionable whether we develop children’s skills in this area enough. It would appear that there are now many more ways to enable children to be creative, thus further enhancing their personal, social and vocational development and this would seem doubly relevant for those children who have struggled with reading and writing in the traditional sense.

Within the area of media education, content creation such as making a film or radio show or book facilitates critical learning in relation to the media in a way that is contextualised and meaningful for the participants. The NCTE coordinator mentioned the Fís project which works with groups of children in primary schools to make short films. In this process children make all the decisions from the topic of the film to how it will be shot. In this context, as well as learning the technical skills they also learn that a close-up will have a certain impact or the use of ominous music may imply that a character is untrustworthy. Through editing they can see how certain sections of speaking can be edited out and this is helpful in showing how the message that is received through media has been mediated. In short their critical and technical skills are developed together. The Fís process also includes learning by critiquing other films and the wider political economy of the film industry. The significance of the Fís project within the context of this work is that it illustrates that learning *with* ICTs and *through* ICTs also necessarily involves learning *about* ICTs *as media*. When this is done within a meaningful context, it is a valuable learning experience for children.

5.3.6 Summary of Research Objective Four

The views of the three experts challenged the prevailing common sense evident in ICT policy and also how we understand literacy. Their views could be said to be critically conscious of the complex relationship between knowledge and power in society. Moreover, this understanding underpinned their ideas and suggestions for how we can move forward to a theoretically informed praxis.

The discussion with the stakeholders with regard to literacy and how it may be changing in the Digital Age provided a number of valuable insights. The first is that literacy is closely linked to the concept of democracy and enabling children to become active participants in society both now and in the future. In this way, critical literacy is an

important part of addressing digital divides and improving social inclusion. Critical media literacy represents a way of both incorporating children's existing ICT skills into formal education while also equipping them with the critical skills necessary to become reflective consumers and creators of information in the Digital Age. Secondly, in order to realise this function of education and literacy training there needs to be a clearer emphasis on critical and creative skills that are necessary in the Digital Age. While there is mention of critical skills within the ICT Framework, the stakeholders in this study asserted that there is a need to think about teaching these skills more directly. Thirdly, critical media literacy is not an area that has been well developed in Irish education and as both the Communications Lecturer and the Media Literacy Expert mentioned, as the communications environment evolves and converges, this is an area that requires more not less attention. Finally, ICTs are not just tools that can help teach the pre-digital literacy skills in a better way, ICTs represent new learning opportunities, new lessons and a range of new skills.

5.4 Conclusions of Chapter Five

Chapter Five can be understood as exploring with stakeholders what is happening in education and what could or should be happening. While the interviews with the teacher, ICT post-holder and Principal were intended to give a sense of the *practice* of using ICT in schools, it quickly became apparent that their views of ICT were largely bound up with their theoretical or *ideological* positions on the essence of education and what it is trying to accomplish; views on how society is changing and what this means for education. All three interviewees were concerned about what might be lost in the transition and not concerned with the slow pace of change in education. This is one of the most significant insights within the empirical work and redoubles the emphasis on the importance of thinking about ICT in education, the importance of discussing and debating, of voicing concerns and moving towards a theoretically informed praxis.

The discussion of literacy is a way of connecting what we do in education to wider society. Inspired by the work of Gramsci, the discussion of literacy suggests that by developing children's critical skills in relation to a wide variety of texts, and taking into account the multiple modes and the multiple social layers of meaning, education can prepare children to live more fully as citizens in the Digital Age. Adopting a critical media literacy approach provides the opportunity to both incorporate children's existing skills into formal schooling, while also equipping children to become reflective consumers and creators of information. While arguments relating to children's adoption of new media have often been met with concerns over how they would affect literacy levels, with concerns that television would displace reading books (Beentjes, 2001), in the Digital Age the online reading environment appears to be closely linked to traditional reading strategies. As the stakeholders asserted, this means that the "basics" or the "foundations" of literacy skills are still prevalent but there is also now a need to acknowledge the broader spectrum of literacy.

CONCLUSIONS AND RECOMMENDATIONS

Introduction: Let's Change Learning

In this section, the overall conclusions of the research are outlined and recommendations are made within the context of the discussion. The thesis began with an acknowledgement of the dynamic and interactive relationship between education and society. While the account of the Digital Age focuses on the impact of society on education, the discussion of literacy is more concerned with how education can influence society. Given the concerns highlighted in relation to the functioning of the public sphere, digital divides and changes in our information and communications environment, it is asserted that education, and in particular literacy education, can play a significant role in addressing these issues. This work marks two departures from the dominant policy stances in this area – the first is that it opts for a social view of ICT in society as opposed to one based on technical skills, and secondly it adopts an ideological understanding of literacy, again as opposed to focusing on “technical” skills. In this way, this work can be understood as emphasising the important role of humans in the process of change in the Digital Age.

When the report to the Minister for Education (2008a) asserts that “learning is changing”, it places technology as the pivotal force in the change. In attributing the agency to ICT in this way, change in learning is presented as something that comes from outside of education. In this view educationalists are disempowered. This is not the perspective of the researcher, nor was it found within the interviews with the stakeholders and experts. Through the exploration of literature and in conducting research with both children and adults, it is a conclusion of this study that the Digital Age represents an opportunity and an impetus to change learning. In this understanding, education professionals and stakeholders, in consultation with children, become the pivotal force in changing the

experience of learning. Therefore, instead of stating that “learning is changing,” it is the conviction of this work that we should begin by saying “let’s change learning”. In order to do this a number of key areas are highlighted within the recommendations below. The first step in empowering stakeholders in the education process to implement changes in learning is to begin a debate.

Ending the “Violence of Anti-dialogue”

In the introduction to this work reference was made to the claim within the Inspector’s Report:

That ICT should be an integral part of the education system is no longer a matter for debate” (DES, 2008b, p. 16)

Raymond Williams might argue, as he did with claims about television, that while we understand what is generally implied by this claim, in many ways it masks the specific meaning because “behind all such statements lie some of the most unresolved historical and philosophical questions” (1975, p. 9). In this work there has been a concerted effort to begin a dialogue relating to ICT in Irish primary education and to acknowledge the unresolved questions relating to ideology and common sense and how they operate within society. It is argued that the conversation about how or why we would use ICT in schools was overshadowed by a technological agenda, concerns over competitiveness in a global market and a “discourse of inevitability” that is focused on keeping pace with change. However, as reports have consistently shown, after over a decade of investment in ICT, it has still failed to become embedded in education. Something in the current approach is not working. As the Literacy Expert said, it was assumed that if we put technology in classrooms that change would happen by osmosis. That has not been the case. Technology does not *cause* change in learning or society; it is only part of the story. The other parts of the story are the social, cultural, political and economic spheres.

What became apparent as the interviewees spoke about the Digital Age and education is the range of opinions and insights that are not evident in policies. For example, the discourse of the teachers opposed the discourse evident in the ICT policies. If we want learning to change, then it is important that people are empowered to realise change. In order to actively participate in transition, according to Freire, people need to be enabled to critically engage with the change and see themselves as actors in it. In this way they are empowered and humanised. Freire criticised any approach to helping people that was not empowering saying it vitiated participation by imposing silence and passivity upon people. This he described as the “violence of anti-dialogue” (2008, p. 12). It is concluded in this work that in not encouraging debate and discussion among teachers, pupils, parents and other stakeholders about how learning could change through the use of ICT, we are nurturing passivity.

Debates surrounding children’s interaction with media, as shown in Chapter One, tend to be polarised. Views on the use of ICT in education can also be similarly divided with those who question or challenge the use of technology in education being denounced as ‘luddites’ or ‘resistant’ while those who are enthusiastic about technology in education can be considered overly enthusiastic or naïve. Buckingham (2007) writes that “[I]n some respects the extreme polarization of this debate can be taken as an index of its immaturity” (p. 49) and this undeveloped debate means that fundamental questions about how teachers and students may use technology tend to be marginalised. In this way, it is a fundamental claim and recommendation of this thesis that we need more, not less, debate. While it would be naïve to hope for consensus of opinion, engagement with the themes and ideas about how we want learning to change and evolve could lead to a coherent vision of education in the Digital Age and the courage and conviction to make it happen. This is what Conlon (2000) implies when he writes “technology without philosophy is blind. Unless it is

harnessed to a clear vision of change then chip by chip the technology could take us into a future that we would never willingly have chosen for ourselves” (p.116).

Conclusions and Recommendations for ICT policy

Partnership and Power Relations

That perspectives on change in contemporary society in relation to information and communications are diverse, was evident both in the exploration of social theories of the Digital Age in Chapter One and also in the interviews with the stakeholders. If we are to make progress with a theoretically informed praxis in the Digital Age, it is necessary to have a coherent view of it. The literature review highlighted concerns about the commodification of information and the possible impoverishment of the public sphere and within the context of this work, these concerns are considered to merit deeper consideration within public policy as these issues relate directly to society and democracy. Within the interviews, challenges for the State with regard to the economy and world markets were highlighted as were concerns about the impact at the level of interpersonal communication and social interactions and the need for people to have critical and well as technical skills. All of these points have implications for education.

Considering ICT education policy positively requires an acknowledgement of the power relations involved in making policy. The contemporary education policy domain is characterised by a partnership approach. While this is positive with regard to including a broad range of perspectives into decisions within education, it also has to be acknowledged that there can be conflicting opinions and it is clear that the policy-making process is one of negotiation and power relations. There has been much the success in relation to ICT in education with regard to developing technological infrastructure in schools. The Communications Lecturer claimed that these gains had been driven by a technological

agenda and the Media Literacy Expert asserted that within education we haven't made enough of the opportunities that we have experienced. Rather than questioning and criticising high-tech companies for capitalising on links with education, he asserted that it is the job of educators and policy-makers to build upon what the technological sector give to education. It is our job to make it our own - to participate in the transition as opposed to being spectators.

Policy Convergence

In Chapter Two, reference was made to the EU policy assertion that “digital convergence requires policy convergence” (EU, 2005, p. 3). While this is a reference to adapting regulatory frameworks, it is argued in this work, that a vision of ICT in education that is more closely linked to the overall process of education would be beneficial. The ICT Framework (2007) does advance a position that ICTs can enhance other curricular areas and so is not advocating that ICT been viewed as a distinct curricular area. However, it is hard to ignore the disparities between the NCCA vision for ICT literacy and the DES plan to improve literacy (2010). It is a core contention of this work that viewing ICT skills as a separate area of learning, or digital literacy as distinct from other literacies will lead to a more fragmented view of educational change. Freire (2008), also criticised over-specialisation because it undermines people having a coherent view of the wider context. Thus, it is concluded that a coherent vision of the Digital Age must also be accompanied by a coherent policy initiative that acknowledges the connections and what the Communications Lecturer referred to as the “spectrum of literacy”. In fact, the Media Literacy Expert when speaking about how he envisioned change in the future mentioned the strategy in the UK of a Digital Britain. He suggested that “we need a Digital Ireland Strategy that has a strong dimension of cultural, media, digital literacy at its core.”

Conclusions and Recommendations for Empowering Teachers

In order to change learning, it is asserted that we need to consider carefully those who are invested with the responsibility of changing learning – teachers. Teachers were not the focus of this work and received comparatively little discussion within the review of literature. However, in exploring learning changing in the Digital Age, it can be concluded that they are a very significant element in changing learning as they essentially have to lead the change.

Empowering Teachers

One of the most significant findings within this work was the way in which the views of the three stakeholders who work directly with children in schools – the Teacher, ICT Post-Holder and Principal - were different from the discourses evident in ICT policies. Although they were in favour of using technology, they also presented themselves as “guardians” of education; concerned about what could be lost through using ICT. Teachers are frequently mentioned within the literature and within the interviews in this work as being one of the barriers to ICT becoming embedded in Irish schools. However, it was not necessarily a fear of technology that was of concern, rather the assertions were about teachers’ readiness at a philosophical level to consider education in the Digital Age. The ICT post-holder stated that, as educationalists, we need to *change how we think*; we need to broaden our view of literacy and not assume when it comes to ICT that children know more than we do. While ICT policies expound rhetorical claims of a paradigm shift, the extent to which this is happening in formal schooling is questionable. Moreover, in speaking to the three stakeholders who work in education, their reticence towards radical change was to the fore. The Literacy Expert astutely observed that in her experience, teachers are happy to change how they are working if they see that it will help education. To assert that “learning is changing” as a result of ICT is disempowering for educators in that it implies that the

change is happening with or without their input. It is the recommendation of this study that any efforts to change learning need to acknowledge the importance of enabling teachers to make that change happen. The Digital Age represents new challenges for teachers and new pedagogies and, it is argued, that they will be more likely to adopt and implement these changes if they are empowered to do so. It is necessary that they recognise their power within the change and their concerns in relation to the integrity of education should be acknowledged and considered. It has not been within the scope of this work to prove this assertion and so it is strongly recommended as an area of future research.

Developing Critical Literacy

Within the discussion of literacy, the Literacy Expert mentioned the idea that we do not become literate at some fixed point; rather we are in a constant process of *becoming* literate. This suggests that we cannot assume that teachers are necessarily literate in the kinds of critical literacy skills necessary in the Digital Age. This is not to denigrate teachers, but it is to acknowledge that the Digital Age represents challenges for us all. The discussion above highlighted that media literacy has never fully developed within Irish education. It was asserted by a number of interviewees that critical literacy skills need to be taught directly and consciously and cannot be assumed to be developed simply through using technology. Therefore, if we are to expect children's critical literacy skills to be fostered by teachers, it is important to be sure that teachers have had the opportunity to develop their own, for as the Communications Lecturer concluded "if the teachers don't have it how the hell can the students have it?"

This work concludes that teachers need to be enabled to be literate in the Digital Age too, so that they may see themselves as agents of change. A critical pedagogy approach would emphasise that we can help teachers to change only by entering into their universe and understanding their concerns. If the aim is to change learning, then Freire (2008) would

argue that the aim must be *to change the people not just the structure*. Thus, any effort to change learning in the Digital Age requires an opportunity for teachers to transform their praxis through awakening their own critical consciousness.

Conclusions and Recommendations for Literacy

Critical Literacy

“The special contribution of the educator to the birth of the new society would have to be a critical education...” (Freire, 2008, p. 29). The Digital Age is often presented as offering new opportunities for people to participate in society as being good for democracy. In order for this to be the case, we need firstly to ensure the integrity of information in the Public Sphere and secondly that people have the requisite skills to participate - both the technical skills and also the critical literacy skills. It is one of the core contentions of this work that fostering critical literacy skills can address both digital divides and can also help children to be more reflective consumers and creators of information. The ICT post-holder highlighted that literacy in the Digital Age is about more than digital skills or tools, saying that what she sees as being important is understanding that literacy is about how we ground ourselves. The Literacy Expert also highlighted a broad understanding of literacy and described fostering critical thinking as something that is needed in education because “that’s really key for the issues that the world is facing”.

While there has been significant work in the area of media literacy in thinking about the relationships between people, media and society, it remains an area within Irish Education where there is scope for further research. The section on literacy within this work revealed a highly contested area where definitions of literacy are scarce and divergent. Thus, it is asserted that there would be value in undertaking an analysis of different approaches to defining literacy. In this way, the conceptual and practical issues at stake in broadening our understanding of literacy in the Digital Age might be addressed. Also,

within the multiliteracies pedagogy there is an acknowledgement that there are multiple layers of cultural and social differences implicit within definitions and structures of literacy. Given the cultural and ethnic diversity in Ireland in 2011, this is also an area that would benefit from further research.

What about the Basics?

In 2010, a report was published that showed that Irish's student's scores had deteriorated on the PISA International Reading Assessment (Cosgrove et al, 2011). This was cause for concern and gained media attention. When the *Draft Plan for Better Literacy and Numeracy* was published in the same year, as discussed in the Literature Review, the understanding of literacy seemed to have been narrowed to a focus on "core skills". Within this work, the absolute necessity of developing core literacy skills is not disputed. Rather the emphasis is on extending and broadening how literacy is "thought about" in education. This applies to both acknowledging a wider range of multimedia skills necessary to be literate in the Digital Age, and also recognising the crucial social and cultural aspects of literacy, so that education can be more relevant to the pupils and also help to foster active citizenship. The interviewees also agreed with this perspective with the Literacy Expert in particular providing an invaluable insight in relation to the development of core literacy skills.

It is important but that is not where it should stop. And you would worry that [sic.about] the literacy policy that the government are formulating at the moment - that it shouldn't be a focus just on core skills...

To reiterate, the basic skills are important, but they are only the beginning. They are not the 'end-goal' of education. The technical skills are important insofar as they are applied. As was asserted in the CCME Study (2001), a major aim of schools is to provide basic cultural competencies to every pupil in society, and this is what is at the core of a call for the fostering of critical literacy.

Addressing Digital Divides in Schools

It is claimed within policy (Smart Schools, 2009) that ICTs can help to address digital divides and promote social inclusion. While improving access has been shown to increase use of media (Livingstone and Helsper, 2007), it is asserted that it is important to acknowledge not just the quantity of time spent but the activities undertaken while using ICT. Taking this into account, it becomes clear that addressing digital divides cannot be done solely through investing in infrastructure in schools. Considering digital divides requires an acknowledgement of the social and cultural divides that result in digital divides.

The exploration of children's media culture highlighted that ICTs are embedded in children's lives not simply as technologies but as cultural forms. Children use various new media because it gives them more or better access to things they are interested in. With regard to education, the message seems to be clear, if we want to engage children in using ICT in creative and innovative ways, they will not do this because ICT is inherently motivating, but because they are engaged or motivated by the activity. It is recommended that if the DES envision an education where children's existing experiences are incorporated into formal education (2008a), they must acknowledge firstly the diversity of experience that children come to school with. They must also recognise the different ways that ICT are constructed in schools as opposed to at home and consider why Irish children's use of ICTs are not transferring to their school work, as was shown in the report on the PISA assessment (Cosgrove et al, 2011). Thirdly, the diversity of experience and interest in ICT that are known as digital divides require different responses in different situations.

We need to foster Children Voices

One of the themes of research with children in recent decades has been an emphasis on giving children a "voice". The empirical work exploring children's media culture was important in this work because it allowed children's perspectives to be heard. While it is

assumed to be positive to *give* children a voice, it is posited that it is more important to recognise that children already have a voice, and it is our job as educators to listen and legitimate that voice. Through listening and questioning the children in the focus groups, they showed themselves to be articulate and somewhat critical consumers of media. Even in the short time spent in the focus group, through questioning they could be seen to reflect and question some of their own assumptions - as was the case in the discussion relating to boys' and girls' media tastes. The findings and recommendations in this respect have two related points. Firstly, when children are speaking on a topic and it has meaning and relevance for them, they are motivated and engaged. It is not the technology necessarily that motivates children to use different media but their passion and interests. Secondly, critical media literacy represents an area where children's existing pleasures and interests can be used as material to develop critical consciousness, to foster a reflective use of media and also provide an education that is not divorced from children's everyday realities. Whether children are considered cyber kids or not, and while they are acknowledged as having some reflective and critical abilities, it is posited in this work that there is still scope to help, teach and guide them.

Education and ICT

Selwyn (2011b) writes that, over the past one hundred years, efforts to introduce technology into education can be described as being a "solution in search of a problem" (p. 57). This implies that technology is implanted in schools, with teachers expected to make use of it. In this way, the technology comes first and change in learning follows. This approach has not yet been successful. In addressing the issue of technology and learning, this work has endeavoured to begin by problematising the issue of technology in education and society *before* looking for a solution. In exploring this topic in this way, it is concluded that there is a need for a clear vision of change, coherence, courage and conviction within

the domain of policy to make the change happen, and for critical skills to be at the heart of the change.

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APPENDICES

Appendix 1 - Proficiency Levels on the PISA 2009 Digital reading scale

Level (Score range)	Students at this level are capable of	OECD D	Ireland
5 and above (above 626)	Students at this level can be regarded as 'top performers' in digital reading. They are able to critically evaluate information from several web-based sources using criteria that they have generated themselves. They are also able to navigate across multiple sites without explicit direction, allowing them to locate information efficiently.	8%	8%
4 (554 to 626)	Students at this level are considered to be able to perform challenging digital reading tasks. They are able to judge the authority and relevance of sources of information when provided with support. They can locate and synthesise information from several sites when this requires a low-level of inference. They are also capable of dealing with a range of text formats and types and can compare and contrast information from different sites and form opinions about what they read by drawing on information from their everyday life.	23%	24%
3 (481 to 553)	Students at this level can respond to digital texts in both authored and message-based environments. They are able to locate information across several pages and compare and contrast information from a number of texts when given explicit guidance. They evaluate information in terms of its usefulness for a specified purpose or in terms of personal preference. They can be considered able to perform moderately complex digital reading tasks.	30%	33%
2 (408-480)	Students at this level can use conventional navigation tools to locate information when given explicit instructions. They can perform tasks such as selecting relevant information from search results or a drop down menu, locating and transferring information from one text to another and from generalisations (e.g. recognising the intended audience of a website).	22%	23%
Below Level 2 (lower than or equal to 407)	These students are performing at levels below those that would allow them to meet the digital reading demands of the 21st century.	17%	12%

Appendix 2 - Topic Guides

2a First Topic Guide

0-5 minutes Access and Use (Part 1)

- What do you think of when you hear the word media?
- Can you think of all of the different types of media (Brainstorm)
- Look at pictures to jog memory
- What do you have in your home?
- What portable media do you enjoy?
- What would you like as a birthday present?
- What could you not live without? miss most?

5-10 minutes Access and Use (Part 2)

- When do you use different forms of media?
- Before school?
- After school?
- In your bedroom?

10-20 minutes Taste in Content

Television - look at tv guides in groups of 2

- circle the channels that you watch
- circle the programs that you like watching
- put an x on shows that you don't like

After this discussion of television shows the level of questioning can deepen

- What is your favourite television show?
- Do you have a favourite person on television?
- What kinds of shows do other people like?
- What would girls enjoy? Why?
- What would boys enjoy? Why?
- What would younger/older children enjoy and why???

Music

- What kind of music do you like?
- Where do you listen to music?
- When do you listen to music?
- How do you hear new music?
- Do you buy music?

20-30 minutes Computers and ICT's

Mobile phones?

- Who has a mobile phone?
- How much do you use it?
- What can it do?

Computers?

- How much do children these days know about computers?
- Do you think you are good at computers?
- How do you learn about how to use computers?

Games Consoles/computer games

- What games do you like to play?
- What games do other people like that you don't?
- Do you play alone or with others?

Internet?

- Do you use the internet?
- For what?
- On-line games?
- How do they work?
- Do you surf alone?
- Social networking?

30-40 Minutes**Social Context of Media Use/Dangers/Benefits?****Family?**

- Do you use any media with your family?
- Is it enjoyable?
- Do your parents have any rules with regard to using media?
- Do you help others or do they help you?

Friends?

- What do you enjoy playing with your friends?
- Do you share/swap games/books/magazines???

Alone?

- Do you enjoy media alone?
- What kinds of media are better for just one person?

Dangers?

- Are there any danger do you think associated with media?
- What might they be?
- Look at pictures and comment....

40-45 minutes**Debriefing Activity**

2b Revised Topic Guide

The aim with the second topic guide is to have a guide that can be followed, that allows the scope for exploration, but that also allows the researcher to ensure that she has covered all areas that she would like to find out about.

Overview of the Focus Group

0-5	General Questions about leisure time
5-10	What are media? brainstorm, six categories
10-15	1. Television and DVDs
15-20	2. Computer and Internet
20-25	3. Phones (also camera and video camera)
25-30	4. Games Consoles and Portable Games Devices
30-35	5. Books/Magazines/Comics
35-40	6. Music
40-45	Critical Perspectives on Media/ICT's
45-50	Debrief: Summary Sheet

General Leisure Questions

- What do you like doing in your free time?
- Who do you spend most of your free time with?
- Who do you live with?
- can you tell me about what its like growing up in this area.
- Do you play outside much i.e. everyday?
- Do your parents have rules about how much you go out?
- How do you feel about the term children?
- What is the best thing about being young?
- If you had to live in another country where would that be?

Media

- What do you think the media are?
- Can you think of examples?

A brief brainstorming session will follow where children come up with suggestions of types of media. When they have thought of all of them, I will show them the chart with the six media categories on it and explain that we will be talking through each of these in succession. This will help give the children an overview of what we will be talking about and how much is done or yet to do.

1. Television & DVDs

Access/Use/Ownership

- Tell me about when you watch TV
- Where are the televisions in your house?
- How did you get to have your own television?

Taste in Content

- Do you have a favourite TV show? What ? Why? who do you watch it with?
- Do you have a favourite character on TV?

- What do you not like?
- What is the most popular TV show on at the moment?
- Do you think that boys/younger children/adults like different things on television? Like what?

Social Context

- Who do you watch television with?
- What would you watch with your friends/family/alone?
- How do you know what you want to watch?
- Do you talk about television shows in school?

2. Computers & Internet

Access/Use/Ownership

- How often would you use a computer or the Internet?
- Do you have your own and what do you use it for?
- How do you learn how to use a computer?
- Do you use computers in school?
- What do you look at on the Internet?

Taste

- What do you enjoy doing on the computer?
- What do you like on the Internet?
- Do you join clubs/websites especially for children?
- Do you use email/instant messenger/bebo/facebook?

Social Context

- When you use the computer at home are you alone?
- If you need help who do you ask?
- Do you go on the Internet alone or with others?
- Do you go on the computer to keep in touch with friends?
- Do you use computers in school in the same way as at home?

3. Phones/Camera/Video Camera

Access/Use/Ownership

- How important is it to have a mobile phone?
- How many have you had?
- How do you get one?
- Who pays the bill?
- Does anyone use a camera or video camera?

Taste

- Are certain phones better than others?
- What makes a good phone?
- How do you know about what phones are good?

Social context

- What do you use the phone for?
- Can you bring them to school?

4. Games Consoles

Access/Use/Ownership

- Do you have a games console and do you play it much?
- Is it in your room?
- Do your parents have rule about what games you play?

Taste

- What games do you like playing? .
- What makes a game good?
- How do you hear about new games? Are certain games popular?
- Are the games you're playing suitable for your age group?
- Do girls and boys like the same computer games?
- Do adults like computer games? why/why not?

Social Context

- Where do you play games?
- Do you play alone or with others?
- Who do you play with?
- Do you play on-line games?
- Do you swap games with other people?

5. Books/Magazines/Comics/Newspapers

Access/Use/Ownership

- Do you enjoy reading?
- Do you buy magazines or comics?
- Do you read books not for school?

Taste

- What do you like or not like? and why?
- What do boys like? What do girls like?

Social Context

- Do you share books/magazines/comics with your friends?
- Do you talk about them with friends? family?

6. Music/Radio

Taste/Social Context

- What kind of music do you like listening to?
- Has what you like changed over the years?
- Why do you think it changes?
- Where do you hear new music?
- Do your friends like the same music as you?
- Do you talk about music in school?
- Do you swap or share music?

Access/Use/Ownership

- How and where do you listen to music?

Critical Perspective on Mass Media/ICT's.

- Do you ever use two or more media at the same time?

- Looking at the list, what media would you think could be described as being good for you? and why?
- If you wanted to learn about something, what media would you use?
- What do you think are the benefits of having media in our lives?
- Do you think there is pressure on people to have certain media or to like/not like things?
- Why do you think you learn about computers and books in school, and not television or DVDs?
- Do you think understanding computers will be important in your future?
- Is watching too much television bad for you? What is too much?
- What is the effect of watching a lot of television or playing a lot of computer games?
- Are there any dangers on the Internet?
- Can you think of any bad effects of any of the media on the list?

2c Interview Topic Guide

Digital/Information Age

- ✓ What do you think the digital or information age means?
- ✓ Does this have implications for education?
- ✓ How well do you think education is responding to the digital age?

ICT in Schools

- ✓ What is good about using ICT in schools?
- ✓ Do you think ICT has or could change learning?
- ✓ Are there any barriers to using ICT in schools?
- ✓ Do you think ICT skills are important for children to learn?
- ✓ Is what we teach in school relevant for children's lives?
- ✓ Do some children benefit more from using technology than others?
- ✓ When I talked to the children about their use of ICT in school as opposed to home, it appeared that school use is very restricted with children having to play certain games and not being allowed to go on the Internet unless it is for a project, what do you think of that?
- ✓ One of the key concerns with children using the Internet is having the critical abilities to be safe on the Internet, how well do you think we prepare children for that?

Children's Use of Technology outside of school

- ✓ Do you think of children's use of technology outside school is changing?
- ✓ Do you think this impacts on their education?
- ✓ Do you think there is then a significant difference between their home lives and their school lives?
- ✓ With our school curriculum being based on a social constructivist and child-centred perspective that essentially states that we should start from what the children know, do you think we do that in relation to ICT skills?
- ✓ What do you think of the idea that children have a natural affinity for technology?

Literacy

- ✓ Do you think what it means to be literate in the twenty-first century has changed?
- ✓ Are there any additional literacy skills you think we should be teaching?
- ✓ Do you think there is anything that you think we don't really need to teach any more?

*Appendix 3 – Letters and Information**3a Boards of Management*

16th March 2010

Re: Permission to Conduct 3 Focus Groups

Dear Chairperson,

I have been a teacher in ---- J.N.S. for the past nine years. I am currently undertaking a Doctorate in Education (Ed.D) in St Patrick's College, Drumcondra.

As part of this course, I am required to write a thesis. The aim of my thesis is to explore children's media culture. Given the significant role that media play in children's everyday lives, I feel that this is an area worth researching.

I am writing to the Board to ask permission to conduct three focus groups in the school in April. The focus groups would take place on days that are suitable to the school. With your permission, I would contact parents to ask for consent for their child to participate in the study.

I have included some details of the study on the accompanying pages. If you require any further information, please do not hesitate to contact me.

I would greatly appreciate your support in conducting this research.

Sincerely,

Marian Henry

Focus Groups on children's media culture: Information for Schools

What is this research about?

This research is a qualitative exploration of children's media culture. Owing to the significant presence of media and ICT's in children's everyday lives, I hope to explore the culture that develops between children, by asking them to tell me about it in focus groups.

Who would participate in the focus groups?

Previous research shows that there are significant gender differences in boys' and girls' media practices and tastes. There are also differences with regard to age.

I would like to explore this by conducting **three** focus groups at two class levels:

- children in second class
- children in fifth or sixth class

At each level I would propose to have variation in the gender composition of the groups:

- Group 1 - all girls
- Group 2 - all boys
- Group 3 - mixed gender.

What kinds of topics would the children be discussing?

- **Access and Use of Media** - what media they have, enjoy using, would like etc
- **Taste in content** - what shows/music they like or don't like and why etc.
- **Social Context of Media Use and Taste** - who they share media time with, what media they talk about etc
- **Computers and ICT's** - how proficient they feel they are with computers, importance for their future life, use of Internet, links with school work

("Media" refers to television, books, magazines, comics, games, games consoles, PC's, Internet games, Internet for communication)

What is the research for?

I am currently in third year of the four-year doctoral programme in St. Patrick's College, Drumcondra, Dublin 9.

Ethical Considerations

The ethical considerations relating to this research are of primary importance to the researcher. This is due to a fundamental respect for the children, their time and opinions. It is also important with regard to the validity of the work.

1. Gate-Keepers

The first step in gaining access to the children in order to conduct the research is to ask permission from the respective principal and the B.O.M.

2. Teachers

I am content to allow the teachers of the children to choose who they feel would be suitable to participate in the focus groups. I would propose that each group would be chosen from a different class, therefore, leading to three teachers each choosing 6 children from their class.

3. Parents Consent

With permission from the B.O.M., I will then write a letter to the parents of the children

who are to participate informing them of my research project and aims and asking their permission for their child to be a part of the study. I have included a sample letter below.

4. *Child's Assent*

Assent refers to the child's agreement to participate in the study. The point of the study, kinds of topics up for discussion and the process of a focus group will be explained to the children so that they can give **informed assent**. They will also be assured that they are permitted to withdraw from the study at any point and do not have to discuss anything that they are not comfortable with. I have included a sample assent form and script of how the study would be explained to the children below.

When and where would the focus groups take place?

With the Board of Management's permission, I will conduct the focus groups in the grounds of the senior school. I will take an E.P.V. day from my own school and conduct the three focus groups one after the other on that day. I propose that I would do the research on Monday 19th, Tuesday 20th, or Wednesday 21st of April, but am happy to consider other dates if these are not suitable. I would be grateful if the school could provide a room for me to conduct the research for the duration of the focus groups.

How will the focus groups be recorded and transcribed?

I will record the focus groups with a camcorder. This is necessary for when I am transcribing so that I can distinguish between who is speaking at particular times. These recordings will be transcribed by me and I will not make copies or show them to anyone else. The recordings will be kept until after the work has been approved by the college and then they will be destroyed.

Confidentiality/Anonymity

I guarantee that the information offered by the children in this study will be treated in the strictest confidence. Anonymity of the children is guaranteed and no names will be used. In the case where information would be easily associated with one particular person, this will not be used. The aim of this study is not to explore sensitive or personal issues and, for this reason, it is not anticipated that confidentiality issues will arise. However, if issues relating to child protection were disclosed I would have a duty to pass on the information. I propose that I should disclose this information to the relevant Principal or D.L.P.

How are the groups chosen?

I want to conduct three focus groups. The children can be chosen by the teachers. For ease of organisation, I would suggest that three classes be chosen. The teacher of each class can then choose six pupils that he/she feels would be happy to discuss the topic. One teacher would choose 6 girls, another could choose 6 boys and the third teacher could choose 3 boys and 3 girls. It is important for the children to feel comfortable and at ease when they are talking, so it is best to form a group from children who get on relatively well with each other.

3b Parents

Focus Group on Children’s Media Culture

Dear Parents,

I am doing a study of children’s media culture. Television, DVDs, computer games and mobile phones etc. are a big part of children’s lives, and I would like to find out what children have to say about this. I will have 3 focus groups where small groups of children talk about their experiences of the media. The focus group will take about 40-50 minutes and will take place in the school on Tuesday, 20th April, 2010.

The research is part of a Doctorate in Education that I am doing in St. Patrick’s College, Drumcondra. I have been working in --- J.N.S. for the past nine years.

The information that the children share will make up part of my thesis. This information will be anonymous and confidential. The children will not be mentioned by name at any point in the study. The focus group will be recorded using a camcorder, so that I can write down everything that is said. The footage will be viewed only by me.

If you consent for your child to take part in the discussion, please sign the consent form below.

If you want to know anything more about the study, or if you have any concerns please do not hesitate to contact me. I can be contacted through the principal.

Sincerely,

Ms. M. Henry

Focus Group Parent’s Consent Form

I consent for my child _____ to take part in the Focus Group on “Exploring children’s media culture” with Ms Henry.

Signed: _____ Date: _____

The topics that will be discussed are:

Access and Use - what media they have, enjoy using, would like to have etc.

Taste in content - what shows/music/games they like, or don't like, and why?

Computers and ICT's - how comfortable they feel they are with computers, importance for their future life, use of Internet.

Social Context of Media Use - who they share media time with, what media they talk about, do they have rules about when and how much time they spend with media? Are there disadvantages/dangers associated with media?

Conducting the Focus Groups

Ground Rules: before we begin the discussion, the children will be allowed to discuss ground rules relating to their role and the researcher's role during the focus group. This will cover respecting other people's opinion, the right to confidentiality and the right to leave.

Informed Consent: The focus group process will be clearly described to the children and they will have the chance to ask questions or voice any concerns they have. If they are still happy to participate they will sign an informed consent form.

Below is a sample of the consent form. Even after the child has signed the consent form, if they want to leave, they are free to do so. I will also be mindful throughout the focus group to make sure that each of the children is comfortable and at ease.

Informed Consent

I understand what this discussion is about: yes: _____ no: _____

I understand that if I don't want to continue talking in the group, I can leave and go back to my class: yes: _____ no: _____

I am happy to take part in the discussion: yes: _____ no: _____

Signed: _____ Date: _____

Exploring Children's Media Culture - Note for Teachers

(Group: Senior Boys)

What is this research about?

I am doing a study of children's media culture. Television, DVDs, computer games and mobile phones etc. are a big part of children's lives, and I want to find out what children have to say about this. I will have 3 focus groups where small groups of children talk about their experiences of the media, what they like and don't like etc.

The research is part of a Doctorate in Education that I am completing in St. Patrick's College, Drumcondra.

What do you need to do?

I have approached the principal and the Board of Management and have been given permission to conduct the focus groups in your school. I would be grateful if you could choose 6 boys from your class who may enjoy participating in a focus group about children's media.

It is at your discretion who you choose to participate in the focus group, and I understand that there are various school factors to consider. In order for the children to be comfortable and enjoy the experience, it is important to choose children who generally get on well together. Also, given the significant ethnic diversity in the school population, it would be favourable if this was reflected in the groups.

What happens next?

Once you have chosen the children, I will return to the school at 12.25 p.m. on Tuesday, 13th April to speak to the children. I will explain what is involved in the project. If the child wishes to participate, I will give them a consent form for their parents to tell them about the project. The focus groups will take place in the school during the week beginning 19th April. Each focus group will take 40-50 minutes.

Thank you for taking the time to choose the groups, I really appreciate your contribution and support.

Kind regards, M. Henry.

3d Informed Consent for Children

Focus Group exploring Children's Media Culture

Informed Consent

I understand what this discussion is about: yes: _____ no: _____

I understand that if I don't want to continue
talking in the group, I can leave and go back to
my class: yes: _____ no: _____

I am happy to take part in the discussion: yes: _____ no: _____

Signed: _____ Date: _____

Code Name: _____

MY MEDIA

27TH APRIL 2010 REVIEW OF CHILDREN'S MEDIA CULTURE FOCUS GROUP CODE NAME:

What did you enjoy about the focus group?

DID YOU LEARN ANYTHING NEW?

What media do you have in your bedroom?

HAVING FUN...draw a picture of yourself doing something that you enjoy!

Which media do you choose...

☒ ...if you are bored?

☒ ...if you want to relax?

☒ ...if you want excitement?

☒ ...if you want to learn about something?

What are your top 3 ?

1.

2.

3.

What would you like to get as a birthday present?

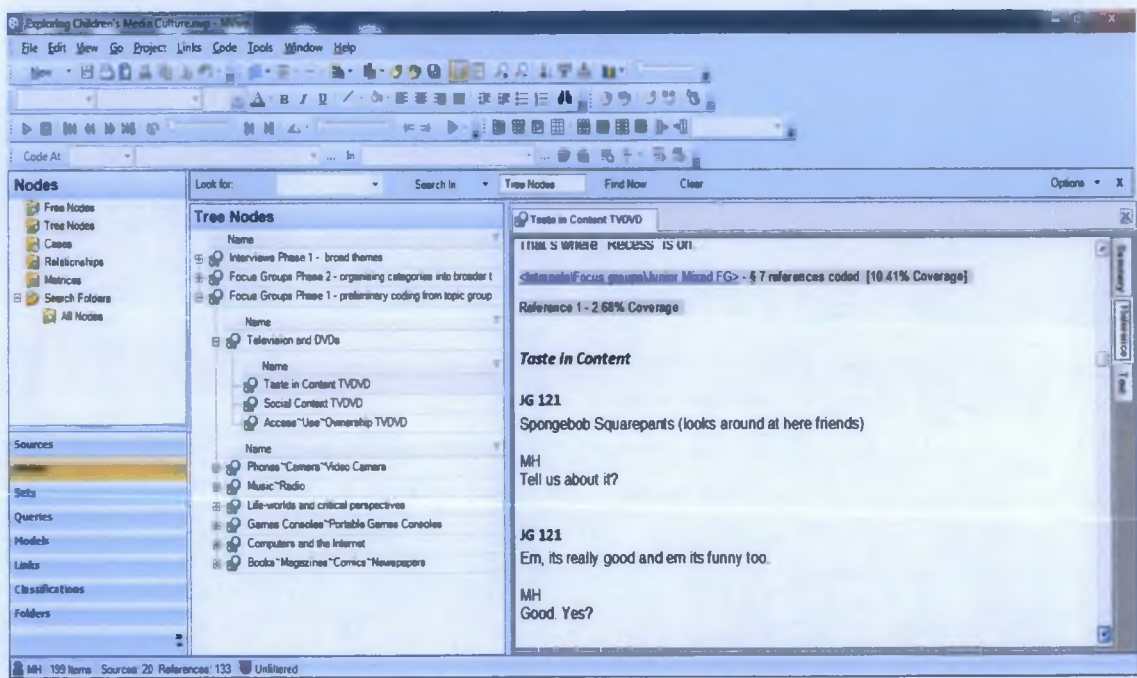
WHAT MEDIA COULD YOU NOT LIVE WITHOUT?

What media do you buy for yourself?

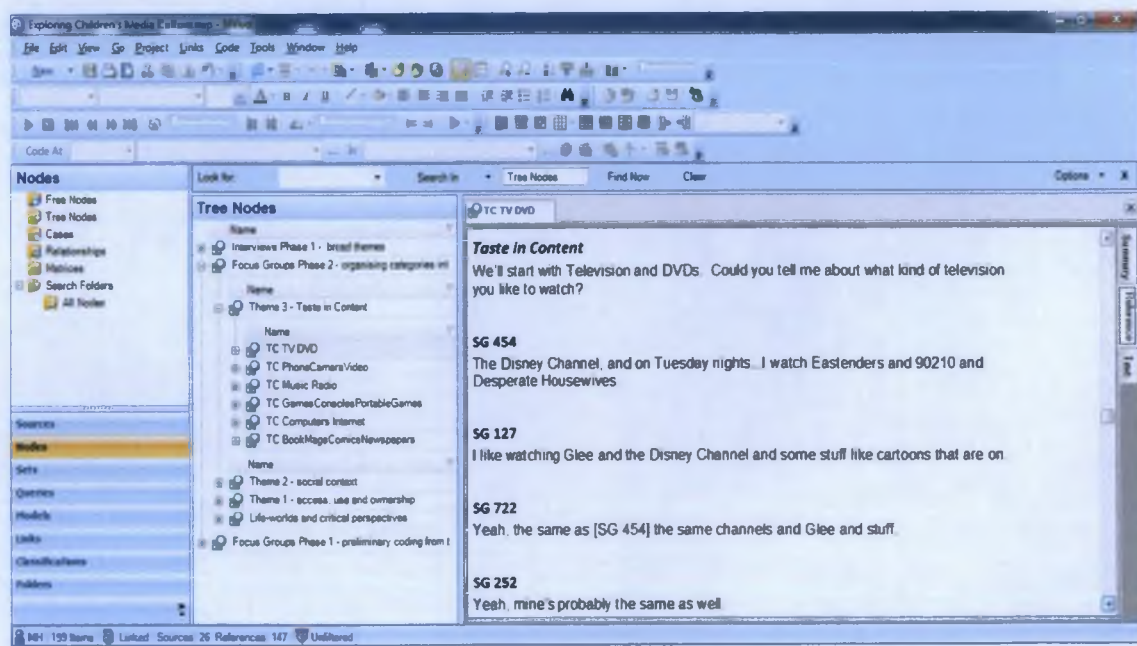
IF YOU COULD HAVE ANY ONE MEDIA PRODUCT WHAT WOULD IT BE AND WHY?

Appendix 4 - NVivo Coding

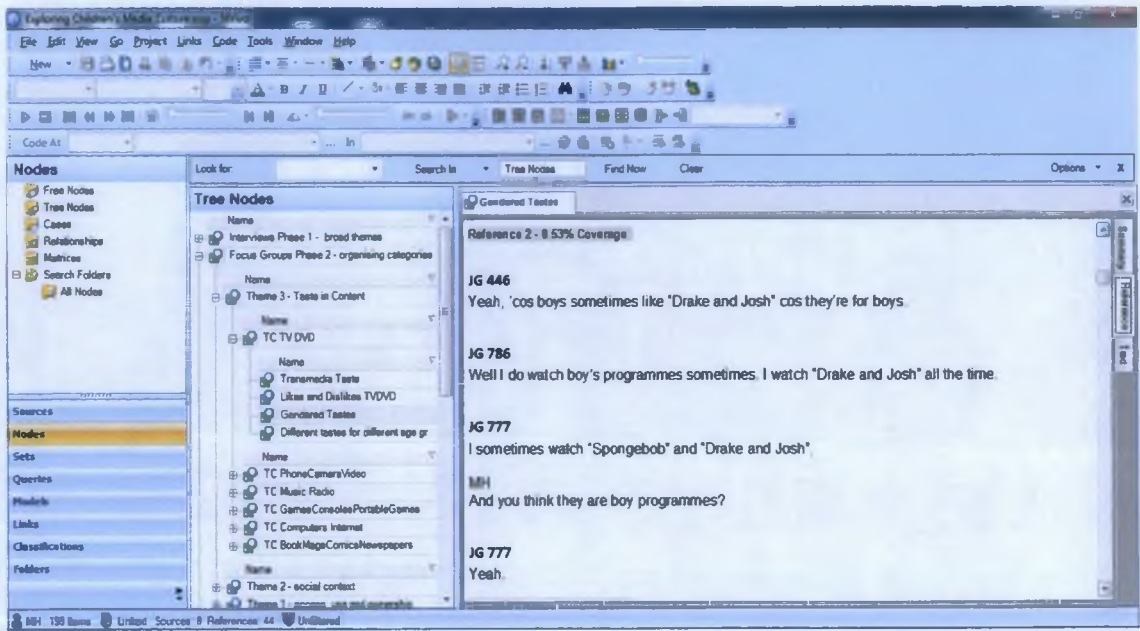
4a – Focus groups, phase 1



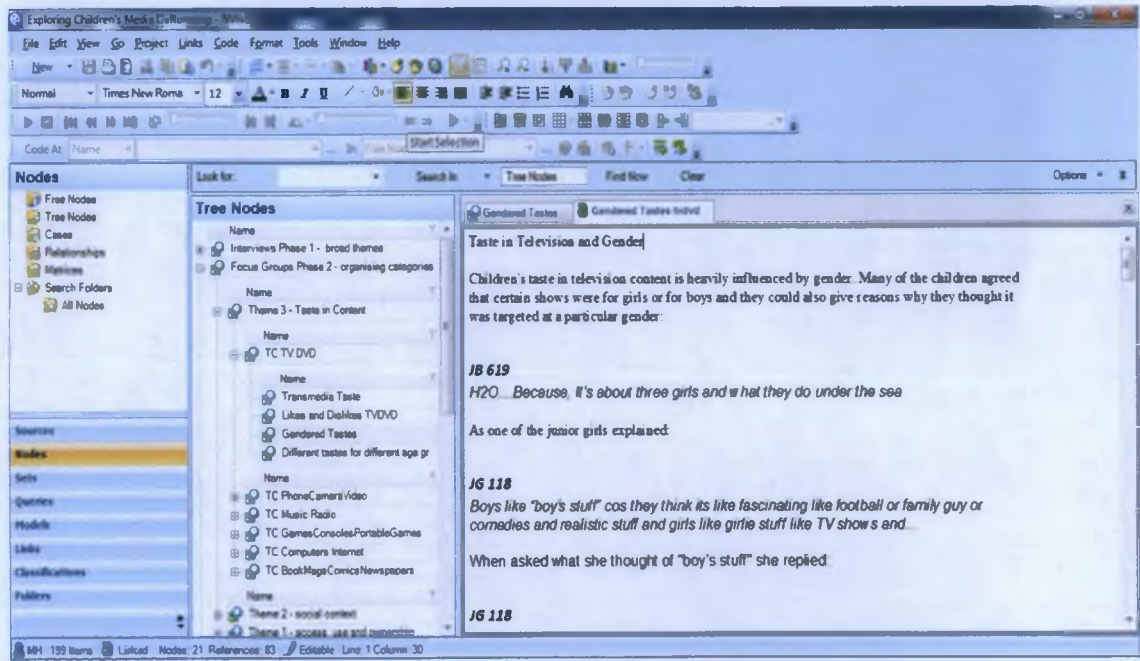
4b – Focus Groups, phase 2



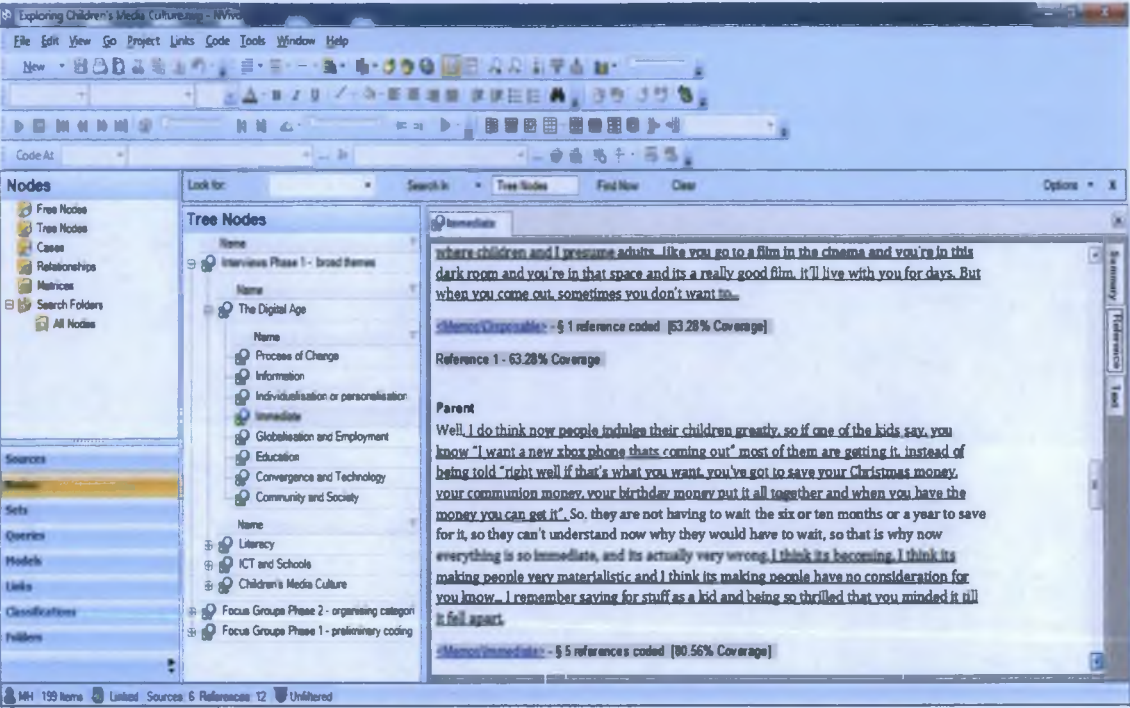
4c - Creating Child Nodes



4d - Creating Proposition Statements (Memos)



4e - Interviews



Appendix 5 - Interview Transcripts Excerpts

1

2 5a The IBM Executive

3 MH

4 The digital age, this is a kind of a buzz term thats out there, and I'm wondering what you
5 think the characteristics of the digital age are?

6

7 IBM Executive

8 Well, there's three things I guess in the digital age, thats driving the digital age and thats
9 interconnectivity of devices. So, devices now can "talk" to each other, which previously
10 that wasn't possible and that interconnectivity in devices drives a whole new aspect of
11 information flow and data collection that was not ever conceivable before, because what
12 you had to do before was the human had to interface and then the human became the
13 weakest link. So, could only take so much data in. Now that devices can talk to each
14 other, they can talk to each other twenty-four hours a day, every second of every day,
15 millions of times faster than any human can, so...So for example, a good example of
16 these is your car. You know, if you're driving along, instead of it coming back through
17 the steering wheel that you're going too fast or too slow, its already told the wheels that
18 the wheels need to slow down because it knows that the engine is moving too fast or its
19 in the wrong gear and its already changing gear, So, all of what had to interface with a
20 human can be now replaced, so thats interconnectivity which is probably one of the
21 biggest things of the digital age.

22 And out of that which kind of ties in is the whole interconnectivity of the world in terms
23 of the internet and that now people em have different markets, there is a different
24 environment. I mean, Friedman wrote only a couple of years ago, his famous book *The*
25 *World is Flat*, I don't know if you've read that or not but, the world is flat. But his thesis,
26 and the reason he says the world is flat is and he gave the example and I've often used
27 this in talks as well, not only because I think its very smart, but I also think its very true.
28 He is about the same age as myself so he was saying in our day, when we were growing
29 up your parents would be saying "eat up your dinner, there is people starving on the other
30 side of the world" and if anybody ever thought about that there is really no connection
31 between what is on my plate and whats...and maybe on a bigger global level there is. But
32 now what he says to his children and I do now with [daughter] is "eat up your dinner and
33 start working on the computer because there are people around the world starving for
34 your job and they can take your job because they can do your job in different places in
35 the world". So that is the whole concept of the world is now flat, its not a question of
36 moving the people to where the jobs are. You now move the jobs to where the people are
37 and the whole digital age has changed the shape literally of the globe because its, you
38 know, at certain jobs at certain levels, people choose "well I'd like to live in california
39 because california has a nice sunshine climate and all that kind of stuff. The fact that I'm
40 dealing with India or Russia makes no difference whatsoever." So, people are choosing
41 where they want to live. And that has a knock on effect on society because the next stage
42 would be, people will be grouping as to where its a nice place to be as opposed to where
43 the jobs are. Now, Ireland has done really well out of this becuae Ireland happens to be a
44 nice place to live and it has a lot of nice scenery and a lot of heritage and a lots of things.
45 So, its a nice place to be and so, we have used that as indeed Google and all the rest of
46 the big multinationals to set up hubs. So, a lot of whats happening is Ireland's becoming
47 a hub for a lot of activity because anything thats moving from the US across eastern

48 Europe and Asia, they are a long way away geographically. So, people still
 49 psychologically like to have landing points you know. "Well if we move stuff to Ireland,
 50 later then Ireland will move it to other places and that is the journey IBM has been on and
 51 that is how we have had such an important and critical role over the last fifteen years,
 52 because we have been that hub and we continue to be that hub. We're setting up a new
 53 area which is exactly that which is a hub for a whole lot of geography.

54 So, I guess, that comes out of the interconnectivity...and the ease of doing business which
 55 is now global. So, anybody who looks at anything from a geography perspective has
 56 missed the boat because Friedman is right, the world is flat now and decisions are made
 57 on lowest cost jurisdiction and that is easily done when you can move the work ot where
 58 its cheapest done, so that changes the whole previous constraints. So, now the digital age
 59 is moving the geographical boundaries or the globe as was once now, so it is that
 60 fundamental.

61 So, thats the interconnectivity and the devices talking to each other and the next part of
 62 that is the volume of data that can be created. And the problem with the volume of data
 63 that can be created is that the human is still the interface and the human can't handle it so
 64 typically what you've got is...A good example is in the medical profession where all of
 65 the assessments can be done, but they ultimately have to come to somebody to review
 66 them all to make a determination because if ultimately they are not signed off by a doctor
 67 or someone like that people say "oh Jesus, the computer made a decision and I'm not
 68 putting my life in the hands of a computer". The fact that you do it every day of the week
 69 when you get into a car, get on an aeroplane...is just, but its not acceptable for that. But
 70 the problem is that you have a GP or any of those guys who are looking at their
 71 computer, their data, is most of their diagnosis is made on the last hundred patients
 72 they've seen not on the millions of diagnoses that have been done all around the world,
 73 so the next phase of the digital world is what is commonly known as analytics. So, what
 74 analytics is is saying "ok we have more data now than we can handle and more
 75 instrumentation, more connectivity, so now how are we going to use that to be predictive.
 76 How can we save lives, how can we save jobs, how can we save and get more productive
 77 and use all this data as a competitive advantage and the way that's being done literally at
 78 the minute is to look at putting sensors in the data, so that you have a stream of data
 79 coming at you from wherever and you have sensors that have intelligence in them that
 80 are able to classify the data as its flwoing through, wrap and pack it and say "if I
 81 benchmark that over the thousands of these diagnoses before, 95% is this and 5%"...and
 82 analyse the data and then you're consultant gets, if you like, he gets a full interpretation
 83 handed to him, in a way that he can say "yeah, that's what I would expect as well, and by
 84 the way, that is supported by the data". So, rather than him having to do all the tests and
 85 remember "what did we do with that..." and that is at a very advanced stage in the
 86 medical world, so can you imagine when thats moved to the legal world which is not
 87 advanced, how all of the data of the cases and the barrister's, solicitors job of the big
 88 library, going along the...find the line, find the reference...can you imagine when that is
 89 just popping up on the screen? The way that'll ahve phenomenal change.

90 So, a lot of what starts digital em the whole digital economy and the whole smarter
 91 economy if you like. And IBM invented the word "smart" and it was really to say, we
 92 invented it and we launched it, which is quite funny in 2008 which was right at the time
 93 the world was crashing and everything was falling, the banks collapsed, imploded
 94 everywhere, the whole world economy. We launched the smart economy and the whole
 95 concept of the smart economy which is around the things that we've been saying of
 96 "where is the future going to be ?"and the future is not going to be where it was in the
 97 past and the people who are going to win in the next age are not going to win by doing

98 what they were doing previously more of it, because its going to be overtaken. So, people
 99 are going to win in the new world are people who take a global view, demand of their
 100 computer and of their computer environment and of the data analytics and they sit then
 101 making decisions based on sound information as opposed to fuzzy wuzzy stuff and
 102 outsource all of that kind of activity to specialised companies that can grow bigger and
 103 bigger, IBM just happens to one of the ones that wants to grow bigger and bigger! But
 104 bigger and bigger meaning that it can have more and more value because it can add a
 105 global resource. So, people in the future will buy, or business in the future will buy a
 106 computer environment and activities as a utility the same way as electricity or water,
 107 where you're not thinking "oh if I had a bigger computer..." no more than you say "oh if i
 108 had more electricity coming in how better would the house be?"...that's not the way you
 109 think, you think in terms of what device will give me what I'd like, given that I can plug
 110 it into the same electricity and their is somebody managing the grid in the background
 111 that means everytime I switch on the switch it just switches on. And thats the next level
 112 of the digital age, so that it'll move away from, and you see it already, you see it with the
 113 applications and the iphone where the device becomes more interactive, more about what
 114 you're using it for more than what it is capable of doing.
 115 You know because previously people used to get involved in digital stuff and they
 116 thought "if I spend a bit more and I bought more and its this powerful"...and the
 117 measurements people had in their heads was how fast would it...but most people never
 118 realised the limitations of what they were buying. Its like buying the whole...started,
 119 intermediate advanced course, I'm still playing the introduction to the start and that'll
 120 probably get you buy. Previously that's what the digital age was about, it was about one-
 121 man-upship, I have the ability to do this and I'm changing and I'm forward thinker, but
 122 was not delivering the results, because to get anything out, you need to put a lot in. A lot
 123 of what the advanced companies in this space have recognised that so they are moving to
 124 make things utilities, so that'll be the digital age in the future. So, it'll be limited only by
 125 whatever sector its applied to...to their ability to articulate what they want, not the
 126 technology and to have an open enough mind to say "why couldn't we have this? Why
 127 couldn't we connect that to that? And why...don't we use what we already have, get the
 128 summary of that and why don't we start from there?" and it'll challenge and it does
 129 challenge the tendency of the human to "lets get a blank page, lets invent the wheel".
 130 And most of the human brain is wired that way to "let me start", most of the population
 131 like to start things, there is a very small percentage like to finish things! And actually, the
 132 future generations need to be the finishers. They need to be the ones to say "why would I
 133 go back to scratch?, why would I go inventing stuff? Why wouldn't I take the things I
 134 have and apply that knowledge?" So, in terms of we're recruiting in the software
 135 business and we're looking for technologists and we're looking for mathematicians and
 136 we're looking for scientists and we have this kind of concept that we talk about where we
 137 talk about i-shaped people and t-shaped people. I-shaped people are people who have a
 138 deep deep knowledge at something, so they can know...and they are needed to bring
 139 through at the level of mathematics and science thats needed behind the technology you
 140 need those i-shaped people. But there's a lot of those around, a lot of people go in to
 141 doing study phds and are happy and want to stay in the world of curiosity based research.
 142 So, they want to research stuff out of curiosity, so they have examples of you'd never...by
 143 working on trying to improve the candle, you'd never have have electricity because it
 144 took a different mindset to....and most inventions that the world has ever used have been
 145 accidental. They didn't start off to do stuff, they were researching one thing and they
 146 stumbled across something eles. So, they are the i-shaped people then. The t-shaped
 147 people which is mostly what we're looking for, what commercial organisations are

148 looking for is ok you have all of these deep silos of intellect but the real advantage is is
149 you can connect across those. So, if you can get someone who has their credentials so
150 they can understand something deep enough but then spend their time trying to connect
151 up difference sciences, that thats where all the break through's will come from. So, they
152 are the three things the interconnectivity of devices, the global and the transformation
153 that that can bring.

1 *5b The Parent*

2 MH

3 So, I'm talking about the digital age, would you have an idea about what you think that
4 means?

5
6 Parent

7 I think it means the way our children now don't play anymore, they're surrounded by
8 computer games, they're surrounded by mp3 players, they're surrounded by you know
9 actual lap-tops computers that even you know you don't even have a role of film anymore,
10 its on a chip. That everything is they can go now and walk in and put this chip into
11 something and its all done, that to me is basically what the digital age is, its all moving
12 towards computers and stuff like that.

13
14 MH

15 So, obviously there are positives and negatives to that, what do you think would be the
16 positives?

17
18 Parent

19 I think the positive's are that we're forever trying to push our abilities to keep up with
20 what is there. I do think in some respects it makes life very easy and then I do think in
21 some respects, its eliminating a way of life that we knew, so there's parts of our lives that
22 are going to become extinct. And then, you know, but its opening new doors as well, so as
23 we're saying goodbye to one part of our lives, we're saying hello to another. I can't say its
24 bad or its good, I think its all about getting an even keel and that's the hard part.

25
26 MH

27 Taking the good and dealing with the bad. Do you think that then has implications for us
28 in education.

29
30 Parent

31 Yes, I do, I think that unfortunately the digital age is moving so fast and so rapidly that
32 maybe the education children are receiving today is in some respects is going to be null
33 and void. Its only just filling their time at the moment and that's whats going to happen
34 you know? I just think that by the time that they decide to choose a career which is
35 probably going to be by what they can get a job in, as opposed to what they want to be, it
36 is going to be digitally, its going to be around that, you know labs are moving towards that
37 way, DNA analysis, its all is put into a machine now and press a button and its sorted.
38 Whereas before things were done I suppose manually, there was physical labour involved
39 in it as in they might have to mix certain chemicals to get these results, now its all done by
40 machine. I don't know like that again, is it good, is it bad? It depends on who you talk to,
41 you know?

42
43 MH

44 Yeah, and do you think that we should be doing something different with children in
45 school?

46 Parent

47 Well I do think certainly, teaching is going to have to be more geared towards the digital
 48 age that our children are going to be living in. I do think that certainly you know we're
 49 going to have to teach them high end skills in that area, like everything you know. I think
 50 probably the only subject that will ever be of any relevance to them when they leave
 51 school now is maths because its going to be all you know, if you go for science it'll be
 52 maths, you know if you go for anything in computers, maths is very important in it as
 53 well, so I do think that we are going to have to think of the future generation and adjust
 54 our education system to facilitate because the manual jobs are dropping off the face of the
 55 earth, you know the store man, the truck-driver, they're not, people are shopping online
 56 now, all those kinds of things are starting to disappear. In actual fact, one of the kids said
 57 to be the other day.... Wall-E, "are we going to end up like wall-e?" that we're going to be
 58 sitting in a chair, and sort of transported around that we won't have anything to do, our
 59 purpose in life will be superseded by computers.

60

61 MH

62 But isn't the thing with wall-e at the end that they end up coming back and then try to
 63 learn how to use their limbs again...?

64

65 Parent

66 Well thats it like but I mean are we going to go down that road? Are we going to go down
 67 that road to learn our lesson?

68

69 MH

70 Yeah.

71

72 Parent

73 That's the problem, you know? I see it like, I would be very computer literate and I see it
 74 from, I remember coming home from America in 1990 and buying the first em....video
 75 recorder at home and them all thinking "oh my god what was this?" I see my kids
 76 downloading stuff from the Internet to watch now.

77

78 MH

79 Easy. And the never read a manual!

80

81 Parent

82 Its so totally different, like and I just think to keep the kids up to date is going to be a
 83 huge...you know and I feel for teachers, their job is changing by the day and its going to be
 84 very hard for them to keep up.

85 [makes a cup of tea]

86 Like that again, its going to have to take the positives and the negatives and move on and
 87 see what, where its going to go from there, as I said its moving so fast that in five years
 88 time its going to be so different.

89

90 MH

91 Yeah because when you think five years ago ipods hadn't even started being sold and
 92 we've even moved on from them so much.

93

94 Parent

95 Yeah, we've moved on and you've even got to think about...

96 [doorbell rings...]

97 Now, I do think that's what's going to happen, I do think there is going to be whole area of
98 trying to find ways for digital age to fit into our lives and for us to fit into that life because
99 I worry about where the jobs are going to come for the people

1 *5c The NCTE Coordinator*

2 MH

3 What do you think the digital age means?

4

5 NCTE Coordinator

6 Oh, digital age, I should know the answer to this shouldn't I? Digital age, what does it
 7 mean? It means, I'll say what anyway, I suppose for me it means access – access of other
 8 people, access to information, access to life, we'll say life skills or ability to develop
 9 yourself as a learner, develop yourself as a citizen. Em, the digital age is about
 10 communicating beyond the traditional remit, communicating I suppose in a global sense,
 11 local, global, nationally whatever it might be. It about...the ability to construct and
 12 deconstruct your information and share that with others and to deconstruct and reconstruct
 13 your contents. So, for example You Tube or whatever. And then I suppose the digital age
 14 is also about computational, computational information architecture, information,
 15 algorithms, that kind of thing that facilitate the digital age, so all your em, you know the
 16 back ends behind the digital, behind the googles, the coding, the programmers. But as a
 17 citizen its should be about greater participation as a citizen in your everyday life – access
 18 to facilities and services. And say if you look at it from a special ed point of view of
 19 special needs, disabilities and all that, how it allows them to participate. And I suppose
 20 then on the other side of it, its about when you talk about the kind of digital, the whole
 21 media rich whatever shape or form that takes, digital or media rich implosion of whatever,
 22 content, non content and how you access that and the various different tools that you now
 23 use to access information and how you absorb and consume content, knowledge,
 24 information whatever it might be via these devices and more instantaneous access to it,
 25 and bytesize information. The digital age to me would be about you know, its an awful lot
 26 of little bits, you know?

27

28 MH

29 Yeah, soundbytes...

30

31 NCTE Coordinator

32 Yeah and so thats what the pressure is, but then I suppose, digital literacy comes into all of
 33 that then, the ability to in a Digital Age, you need certain skills to be able to partake in that
 34 where information is only presented in one shape of form, then you need to have the tools
 35 to do it, or and again it comes back to my first point about access, or you need to em have
 36 the skills to search for the right piece of information knowing that it is valid or is verified.
 37 If you are sharing information that you have applied whatever it might be, the right ip
 38 rights, whether if you are pulling down whether you authorise, so all tht kind of digital
 39 media, digital literacy, ICT literacy whatver they want to call it. And thats enough I'd say
 40 said on that one.

41

42 MH

43 Yeah. All the things you said there were quite positive, do you think there is a downside?

44

45 NCTE Coordinator

46 Oh yeah. I suppose then if you are to think about that. I don't know of you've read the
 47 book, its called the Shallows, Nicholas Carr's book. Is it the shallows?

48

49 MH
 50 I don't know.
 51

52 NCTE Coordinator

53 But it talks about attention spans and because in a digital age you have access, you know
 54 you have your phone here, you have something else there and you have a laptop and you
 55 have a screen maybe of, your attention span, your ability to absorb information could be
 56 affected or your ability to pay attention to and reflect, I suppose more importantly, on what
 57 you see, what you read, what you hear or what you build and share and that is a cautionary
 58 note in that it can affect how people think, how humans, the human mind thinks or their
 59 ability to think. In some cases there is a fear that we are ignoring and in particular in
 60 education, we are ignoring or there is potential to ignore the importance of sitting down,
 61 thinking about something, questioning it, coming back to it, from it and not just skipping
 62 through information all the time. And I suppose the other side then is coming back to the
 63 downside of the sharing and stuff is intellectual property abuse of that, because you can do
 64 that more easily on the web. You can plagiarise, you can do all those kinds of things, a
 65 little bit more easily than you could and obviously in the digital age, social networking and
 66 those web 2.0 type applications do bring about...its not that it was never there, but for
 67 example, you know where you have paedophilia or something like that. That was always
 68 in society, I mean people always picked up porn magazines if they could get their hands
 69 on them or find some way in a black market to get them, but they're so much more readily
 70 available, but people can disguise themselves more effectively online and therefore thats a
 71 huge risk and its something that we'd be extremely conscious of here and our initiative on
 72 internet safety would be about educating people. But it is a downside for sure and
 73 understanding how you do it and its not about teenagers may be savvy users but they
 74 sometimes don't know the consequences of putting something up there and leaving it
 75 there, you know? So, there is a downside for sure, there is the downside the personal
 76 safety aspect, just that whole, the human mind or the thinking mind or the computational
 77 mind inside the human brain as opposed to the computer brain and how the two meet. And
 78 thats the danger then that people become a little bit, and I suppose then you have this
 79 whole thing going on where children are spending too much time on, you know sitting on
 80 a couch playing a game in a digital age, when they can when maybe they should be out
 81 riding a bike and getting some fresh air. So, there are certainly doowndside, you couldn't
 82 but. But I, you probably would have to say, or I would ahve to say in my position and my
 83 interests that they probably far outweigh, you must reach balance in your life, there are
 84 people who are obsessive and who are on twenty-four seven access and I'm not so sure
 85 that that is necessarily what life is about, but for some it may be, so you can't make that
 86 judgement.

87
 88 MH
 89 And people have always been obsessive about different things, and if you're obsessive
 90 about any one thing its going to affect...

91
 92 NCTE Coordinator

93 And the other downside is the pace of change, its just so incredibly fast that just when you,
 94 and you know if you are to look at that from an education perspective, the pace of change
 95 is controversial in two senses one the ability to absorb, just when you are getting the hang
 96 of one thing, something else comes in, you say can I do it better and you have to figure
 97 that out and try around and then secondly the cost implication, you know it is an

98 implication and the technical support required around these things, when they break they
99 go and thats from a school's perspective but even from an individual perspective, its a pain
100 in the neck when you don't have it and you're cut off. And if you don't engage with the
101 digital age now more and more you become....if you can't do certain bookings and things
102 on line then you can't do them because they don't accept them in any other form. So, I
103 suppose thats kind of a life long learning thing.

104
105 MH
106 The ryanair flights...
107
108 NCTE Coordinator
109 Yeah

1 *5d The Teacher*

2 MH

3 And do you think that that changes how we teach?

4

5 Teacher

6 Yeah certainly I think...in terms of homework like its great for children, you can send
7 them off to search for things where they mightened have had the resources to do it before,
8 if they didn't have, they didn't know where to find information, you had to get it and give
9 it to them, you had to "spoonfeed" them more. It doesn't really apply to infants but they
10 can go and do things themselves now that they couldn't do before. I think even going up
11 through even into secondary, it changes things even more because they can do projects,
12 they can do blogs, they can be more in control of their own learning. But in terms of
13 teaching it changes things for us because we have more ideas, its a wider network of
14 teachers where you can share and collaborate an awful lot more.

15

16 MH

17 Do you think in education we are responding well to this digital age?

18

19 Teacher

20 I think so, yeah. I think we're a little bit behind the trend. I think industry came first and
21 then education came after, but I think thats kind of been the way throughout history
22 because you have to have tried and tested methods. You can't experiment with it it...you
23 can't risk a group of children going through primary school and at the end saying "oh that
24 didn't work" you know? I think we are behind the trend but we're catching up. I think
25 particularly in the last couple of years I think the grants have been made available, the
26 department is pushing it. They want it to be very much part of teaching.

27

28 MH

29 Why do you think the department is pushing it?

30

31 Teacher

32 Because its the way its going, if the children are moving in that direction we have to
33 follow and the way children learn is changing because of it, we have to adapt to that.

34

35 MH

36 So if we talk then about ICT in schools, what do you think is positive about using ICT in
37 schools?

38

39 Teacher

40 Well I think it engages them more, the interactive whiteboards and that, you know you can
41 engage more frequently. It's great motivation and use for them and then even within our
42 own staff we can collaborate with it, I can put up and lesson and others can get it and
43 likewise nextdoor can do it and I can use it ten minutes later or at the same time even.

44

45 MH

46 And we could never have done that...

47

48 Teacher

49 No, we were very much islands before, but it has opened it up, it has made the classroom
50 more open place and people can see what you're doing and share...

51

52 MH

53 Do you think there are any barriers to ICT?

54

55 Teacher

56 Well finance can be the basic one but I think they are trying to overcome that, but skill is
57 another one as well, a fear of technology. Like some people have or an inability to learn it
58 or an inability to or a not willingness to learn it either. There are some people that just,
59 they'll teach the way they have always taught, so they won't want to...there are other
60 people who want to change but they just don't know where to start. Its a massive
61 undertaking if you never used a computer or you're not used to it to end up with a
62 computer in your classroom and an interactive whiteboard to be expected to integrate it
63 into every lesson. So its a difficult task and some people I think, it overwhelms them.

64

65 MH

66 Yeah, do you think ICT could be integrated into every lesson?

67

68 Teacher

69 Em, I don't think it should be integrated into every lesson, particularly for, we're a junior
70 school and I mean there is a certain amount of research as well that says that children
71 should be at computers everyday. So I think, if you wanted to find an angle you could, but
72 I think there has to be a balance, they have to be away from a screen at times and we're
73 trying to get back in education so that they can do more practical work, so it has to be a
74 balance between both.

75

76 MH

77 Do you teach any ICT skills specifically do you think?

78

79 Teacher

80 Not really. Not to infants, not that...I mean I teach them how to use a mouse and maybe
81 that is an ICT skill for one so young, if they have a laptop at home or if they don't have a
82 computer then they don't know how to use a mouse, like they don't know which button to
83 use. Maybe thats basic ICT skills but I don't teach them anything....

84

85 MH

86 So, is ICT just a tool that helps learning as opposed to something that should be studied in
87 and of itself?

88

89 Teacher

90 Em, I think as you go up through the school, it should be studied more for itself. I mean if
91 you want them to go on into secondary and be able to....I think there is great scope for it.
92 For the likes of history, you study people in history and they could hae a blog for each
93 person, I've seen it...but in those situations it just if the history teacher is interested, they
94 have to teach the children how to do it. A history teacher shouldn't be teaching HTML
95 code, you know so it has to be, they have to know the skill if they are going to be able to
96 use it effectively, if they're going to use it as a learning tool they have to ahve the basic
97 skill and I don't think we cater for that properly yet.

98

99 MH

100 Do you think the teacher is of central importance then?

101

102 Teacher

103 Well yes...but I think...we need a specialised ICT teacher. Every teacher can't be expected
104 to have the same level of skill. I mean you can use it, its only as good as you make it and I
105 mean people are going to use it in ways. I think if you want children to have an equal
106 understanding, and equal level of skill then you need a specialised teacher to come in and
107 teach.

1 *5e The ICT Post-Holder*

2 ICT post-holder

3 OK, so education in Ireland. It really varies. It depends, it's very much a school by school
4 basis. The broader umbrella of the likes of the National Council for Technology in
5 Education (NCTE), those, they would have their finger on the pulse in many ways. They
6 would be looking out for the likes of Internet safety and I suppose the NCCA have
7 different frameworks, we're looking for different frameworks of using different media
8 within...I think we're trying to find a conceptual framework for digital media and working
9 digitally with children. I think when it comes down to it, like policies in schools, different
10 schools and different contexts deal with it in a very different way. Some schools I think
11 would be using it brilliantly and it does change education. I think other schools aren't
12 necessarily embracing it or taking it on in a way that is possibly not as effective as it could
13 be.

14
15 MH

16 Would you think your school is?

17
18 ICT post-holder

19 I think so, and that's not just because I am the ICT coordinator! I would say so, but its
20 really slow. It's very slow to change. That's not necessarily a bad thing in some ways
21 because if you get so excited about something you can lose sight of what's important
22 behind it. I still think you need a certain amount of drill. You need a certain amount of
23 learn your tables, learn your spellings you know, basic information? I think there are
24 certain projects out there, I mean its terrible to mention the Digital Hub, it's a great project
25 but I'm wondering are we losing sight of what's important? We're talking about
26 curriculum questions here, we're talking about what children should be learning using
27 obviously different methodologies and within that like different digital media and that. I'm
28 wondering...so your question...that last question...oh yeah in our school. It's responding
29 well from the point of view that it's not just the hardware. It has moved on to looking at
30 "this is what I want to teach, this is what I feel children should be learning, and how can
31 ICT, various technological devices help me to enhance that?" rather than as add-ons, "this
32 is what I should be doing, this would be cool". You know just that it actually genuinely
33 makes a difference – its not arbitrary. And we are slowly but surely improving.

34
35 MH

36 So, in the way that you are discussing it, it is very much a tool that can help the way we
37 teach?

38
39 ICT post-holder

40 Very much so.

41
42 MH

43 Do you think we ever need to learn about technology for the sake of technology?

44
45 ICT post-holder

46 We do. I think. Children can learn more so through learning through other things, like
47 their history, geography, science and use it as a tool. Teachers, they do need the know-how
48 at this stage anyway because we have, they haven't been necessarily part of our

49 upbringing as much as children. I do think we do need a know-how but it certainly should
 50 not be the focus and teachers still should be learning various things for teaching through
 51 the use of ICT. There should be certain skills, they are explicit and they need to know how
 52 to turn on a computer and you know and they need to know the pit-falls of using things but
 53 to be discerning about that rather than just purely design your own website type of course.
 54 It should be, how is this...that's our job. We are teachers so we should be learning more so
 55 about the use of ICT in our job.

56

57 MH

58 Yeah, the framework, the sense in the framework is that it will "add value" and you'd
 59 agree with that?

60

61 ICT post-holder

62 Definitely, very much so.

63

64 MH

65 Brilliant. What do you think, I know you've mentioned some, are the barriers to using
 66 ICT? What stops it being really effective?

67

68 ICT post-holder

69 Well its lack of knowledge, how to use the actual hardware. There is as in ICT, your little
 70 devices, your blogging, your wikis whatever, some people fear that because it's a form of
 71 change. Its change that some people perceive as impossible or they'll never know enough
 72 about. There is a perceived notion that children know an awful lot more about this than
 73 teachers do and there is still somewhat of a culture in certain schools that the teacher is
 74 still the imparter of knowledge as opposed to you know "I don't know that so lets go find
 75 out". So, yeah, that em, not actually having the tools or the money for it, the finance
 76 behind it lets be honest. But I think there are three things here and they were alluded to in
 77 ICT policy for years and still, one being professional development that holds it back, if
 78 teachers don't know how to use it and why they are using it and for the right reasons that's
 79 going to hold it back. Not having the hardware would be another one and then the likes of
 80 technical support and I still say that they are three huge ones.

81

82 MH

83 And what about the software that is available for schools?

84

85 ICT post-holder

86 Yeah, some are of a very high quality and its getting better. More so than even the
 87 software is some of the freeware that is absolutely brilliant. It takes time to make, not from
 88 our point of view. It takes time to review and see what is really good. It's like looking
 89 through three or four text books to get the best bits. It does take time to do that. But I think
 90 between online materials for your text books, its bringing teachers from their comfort zone
 91 into a new way of thinking. So, but yeah there is some fantastic software out there, stuff
 92 that you can show children even the web 2 technology, some schools have YouTube and
 93 that, showing a complex concept there in video format, you know that children can
 94 interact with it does enhance their learning. So I'd be a very pro-ICT technology kind of
 95 person.

96

97 MH

98 Yeah, do you plan specifically for ICT?

99

100 ICT post-holder

101 Yes. And that is my big thing as ICT- coordinator that its not just did you use your slot up
 102 in the computer room this week. I don't necessarily even want to be seeing them in the
 103 computer room all the time. I think that it shouldn't be arbitrary that we're doing
 104 computers now. Even though children may call it that, but that we are going to research
 105 this or we're going to practice maths whatever or we're going to compose whatever in
 106 music that that has to be planned for authentically so what I would encourage the staff to
 107 do and which, we're going for a Digital Award and so we needed to show evidence of this
 108 and so it was great for them. They had to show where authentically they were planning as
 109 in "I'm doing World War 1, in what ways can I enhance this, what methodologies will I
 110 use? We'll look up such and such books, we'll do that. ICT will enhance whether it's a
 111 stimulus for introducing the topic or whether its footage or whatever the, yeah so we do
 112 from infants right up to sixth.

113

114 MH

115 This is a slightly different question. You have said that the whole of society has changed
 116 and I know that we are changing how we teach in schools, but how are we preparing
 117 children to be a part of that world that has changed?

118

119 ICT post-holder

120 I don't think we are doing it enough yet. I have had fifth and sixth class for the last few
 121 years and I am watching how already they are thinking about, or their parents even more
 122 so are thinking about secondary schools, college, jobs. Are they going to be able to
 123 function in that society? Whereas I would still look at our infants and wonder how are they
 124 going to function in our society? I don't think we are because, as I have said, change has
 125 been slow enough not just in our school and I think we are doing pretty well but in the
 126 education sector in general, I don't know if we are reflective of society. I think they are
 127 two separate worlds in some ways that what they see around them at home and the tools
 128 that they use and the ways that they communicate, compared to in school, there is still
 129 quite a gap between them and that where we trying to now plan so that we're showing how
 130 we use these as tools for example. I think that, yes society has changed in many ways and
 131 not in other ways, I think we're planning them enough for the how bombarded they can be
 132 with information. Now obviously at an age appropriate level you give children information
 133 but even at the age of fifth and sixth and a little bit younger, information is constantly
 134 coming at them. What I would be trying to get across now would be about, I've said it
 135 before, being discerning about knowledge, good knowledge or useful knowledge. What
 136 can I trust? What can I not trust? Is this useful or not to me? That kind of thing, I don't
 137 know if we are doing that enough, not only that but also what will help me in society here,
 138 what helps me function because lets be honest like anything to do with literacy and digital
 139 literacy is not just to do with being able to use a computer, its more powerful than that. I
 140 think its more to do with where you are in society and the more digitally literate you are
 141 the more of a place in society you have that's more powerful, I think. Its gone right the
 142 way back the ages but em I think yeah...

143

144 MH

145 So, you think digital literacy is about more than skills?

146

147 ICT post-holder

148 Huge, and I can see where teachers would confuse you've got your literacy of reading and
149 writing and that but literacy is more about communication and how we do that. Now, I
150 suppose digital literacy we would say is using a computer, but its not about that at all. Like
151 I suppose, literacy from the point of reading and writing would have been how we would
152 have perceived literacy years ago. It would have been, I think was saying to you earlier,
153 about the power that the people had, back then, those who were literate in many ways had
154 a whole different outlook, a whole different standing and understanding of the world
155 around them and it's the same with digital literacy, it's in the way that we see ourselves,
156 we ground ourselves, that we understand our context and other contexts. Digital literacy,
157 that's what that's about for me, not just the tools. So, they are, when I talk about even the
158 digital age its not just about the tools, its about our whole grounding ourselves within it.

1 *5f The Principal*

2 MH

3 Do you think then that this has implications for education?

5 Principal

6 I do, because I think for us as teachers, there is a lot of information out there, a lot of stuff
7 that we can access if we know how to do it. And for children, its very immediate
8 information, but I think part of the problem will be how much will they retain and then do
9 you need to retain things? When we were young and we were learning something you
10 were learning it to remember it to use it at a later stage and if you were good and you had a
11 good memory I think people did well in tests and all of that kind of thing. Whereas I think
12 for children now if they don't know something, they can find it out, but they don't
13 necessarily need to remember because they can go and find it out again the next day
14 because the information will always be there and its very immediate. From a teaching
15 point of view its a great resource but from a learning point of view I think children are
16 learning in another way and I don't what that will (pauses) I'm not sure where that will
17 lead us.

19 MH

20 Yeah, do you think that we are thinking about that enough and responding to that?

22 Principal

23 (pauses) Probably not...I think we kind of dip in and out of it, you know that kind of way?
24 I think some people are trying to do it, some people are promoting it, some people are
25 doing it anyway. It's like any new thing, you start using it and you learn more about it. It's
26 the process more than the product at the end. But I do think that we, it's going so far ahead
27 of us that if we don't engage with it there will be huge gaps and I just think some people
28 are better at that than others. I think you have to be using it to fully understand it as well
29 you know?

31 MH

32 And by "it" you mean?

34 Principal

35 I mean, sorry, information technology. I suppose I'm thinking like computers, Internet,
36 mobile phones. Just any way of communicating now that there is.

38 MH

39 Yeah. As a Principal what is your experience with promoting ICT?

41 Principal

42 I'm very much in favour of it. I don't feel as skilled myself but I am always trying to get
43 better. I think I understand the concepts of it. I see the possibilities and I have ideas of how
44 and I feel "I'm sure you could do this" but I actually don't know how to do it. So I need to
45 get someone to show me how to do that. I do feel that we have a lot of technology and I
46 wonder are we getting the best out of it? I do have concerns about children...are they going
47 to sit in front of the screen? Is everything going to be delivered to them via a screen and

48 what does that do to the real experience? So, while there are lots of positives, I do see that
 49 like. I see children staying in at break and during every break are they going to watch a
 50 DVD or something on a screen? Which is very pacifying and calm and lovely for everyone
 51 supervising but really you'd sort of question the value of it. And again, what's real? You
 52 know we can't lose the hands on and human interaction and I think for some children
 53 technology is a safe place for them but nearly too safe because they never have to
 54 experience the real world, so I have issues around that. But from...I'm trying to remember
 55 the beginning of your question now...

56
 57 MH

58 Well, I think you have answered it! Do you think ICT has the power to change learning or
 59 has it already changed learning?

60
 61 Principal

62 Yes, I think it has. I may have answered that already but..

63
 64 MH

65 You have, yeah...

66
 67 Principal

68 I do and I suppose because I'm coming from an age where I learned in a different way and
 69 I'm also learning in a new way, I've seen the possibilities. I see it all around and I saw that
 70 summer course [twenty-first century skills] and I thought that's great and that's brilliant
 71 but I wonder, I look at my own children and I'm saying is everything they're going to
 72 learn...they are going to learn in a different way than I have learned. I still see them
 73 learning, and I still see them being fascinated by something new and I still see how they
 74 think and what they say. So, if it improves communication...my biggest fear is that
 75 communication skills and social skills will be reduced. Everything is very...they don't
 76 have to share as much, they don't have to take turns as much. They don't have to make a
 77 decision, you know, even simply in a house, I'm sure in most houses now there is more
 78 than one TV so there is all that side of it. That there is great choice there but then "Oh I
 79 don't have to sit and watch this, because I can go and watch it on another TV" you know
 80 or the same in a classroom, "I don't have to learn this, I can go and do my own thing
 81 because I can go on the computer or I can find out through my iphone or"...you know what
 82 I mean? So, we're not all learning the same thing.

83
 84 MH

85 Yeah, and often this individualised sense of learning is promoted within education. That
 86 technology will enable us to have very particular focus in our lessons for different
 87 children. Do you think then we are losing something?

88
 89 Principal

90 I do. That's what I mean, I think we're losing that collaborativeness and I think as well its
 91 all about "me", you know "I, I and I can have this" and everything is very...I think its like
 92 immediate gratification and I'm not sure that that's a good thing for society but that's what
 93 out there so I suppose we have to manage it and I think that that is the danger. I think you
 94 still need to pull back as educators and just pose a problem and let a group of people sort it
 95 out because at the end of the day that is really what happens. It's a tool, you know what I
 96 mean and we just have to learn how to use it and manage it as opposed to allowing it to
 97 direct and conduct us you know? I don't remember any phone numbers now because I

98 don't have to because I know they are in my mobile phone. So I have learned a way, a
99 strategy and I know in the classroom I would have looked at children who would have
100 learning difficulties in the past and I would have felt that they don't need to remember all
101 this to survive, because they are not able to but I can show them where they can go to find
102 that out. In the past it would have been like an atlas or a directory or how to use a
103 dictionary or how to use a phone book or how to access you know if you are stuck on
104 something you can ask this person. Do you know what I mean, even that kind of help or
105 support to somebody. Or if you don't know how to spell something, if you can't
106 remember, if you're someone who is very bad at remembering, well you don't actually
107 need to know everything you can use a dictionary to learn how to spell. But now, its far
108 more how would you say, that is the case for everybody. Whereas a large number of
109 people would remember phone numbers because they needed to remember them and they
110 were able to. Now, I'm able to but I don't bother and I'm wondering if I'm losing
111 something, or is that age?! I'm not probably being very clear there, but do you know what
112 I mean?

1 *5g The Literacy Expert*

2 Literacy Expert

3 In an ideal world now or you know? For me, its an incredibly exciting time for education.
 4 Its something we haven't quite grasped in Ireland yet I don't think, but internationally
 5 because I work with a lot of international colleagues I mean it is changing the way
 6 education is framed. I mean the teacher has moved very much from the director learning to
 7 like a co-learner with the kids. And not being afraid of that, and not being afraid to be part
 8 of a community of learners within a classroom. And I think the digital age has also built
 9 this idea of the classroom beyond the four walls of the actual physical building to very
 10 much a global classroom and I've seen some very exciting work going on where you have
 11 children collaborating with one another across vast spaces. And even for me as a
 12 researcher I can collaborate, I had a skype call with colleagues across the United States, I
 13 had it with a colleague in Australia where it was the next day for her. I had it with a
 14 colleague in the UK and we were able to collaborate online in a research project. That to
 15 me is really exciting to be able to do that and so I think its really expanding the world for
 16 use and we're moving I think very much from an insular kind of approach to very much a
 17 global learning approach and I think the whole idea of being able to foster those higher
 18 order thinking skills and critical thinking skills, thats something that we need, thats really
 19 key for the issues that the world is facing and I think for education we need to start right at
 20 the base-line level and build those skills up with kids from day 1.

21

22 MH

23 Could you give me an example of what kinds of skills you are talking about?

24

25 Literacy Expert

26 Well for example if you are talking about reading on the Internet. We do talk to kids when
 27 they are reading a book to develop empathy with the characters or higher order thinking
 28 skills but on the Internet you have to read with a critical eye, you have to be a critical
 29 thinker, you have to have what I would call a "healthy scepticism" about the information
 30 that is presented on-line because anyone can put anything on the Internet. So in my study
 31 for example, we used some of the spoof websites that are out there like Dog Island
 32 website. Or there is another one the Tree Octopus website and we got the children to
 33 assess the reliability of the information or otherwise. And so those kind of critical thinking
 34 skills and critical evaluation skills are crucial to develop and also when you are on-line
 35 you have a visual literacy going on. So, literacies are now multiple literacies. You need so
 36 many different forms of literacy to read on-line and we really need to think about that as
 37 well, you know? So, we need to build up the kids critical thinking skills, their critical
 38 reading skills, their critical evaluation skills. You know, the author stance – who wrote this
 39 information? What was the stance from it? And their visual literacies, how they are able to
 40 discard some of the information they're seeing and knowing what to read and in what
 41 order to read it and its very much constructed by the readers themselves, you know?

42

43 MH

44 Yeah, because one of the things that comes up in the literature is that literacy is not linear,
 45 that its much more web-like, that you read in a web and you can miss things because you
 46 are going in different directions and all that...

47

48 Literacy Expert

49 Yeah, well I mean in terms of reading in an online environment, I mean its very much an
 50 n-dimensional space. Its a room with a billion doors so if you and I go on-line to read we
 51 won't get to the same information in the same way. I mean I found this with my own, [----
 52 -----] I would set them inquiry based tasks and I would map a path to some possible
 53 answers, they never followed the same path. Nor did they follow same path with other
 54 groups in the classroom. So, the reader is very much, the reader rather than the author for
 55 the first time is actually constructing their own reading path through the information and
 56 they are reading in a non-linear manner. Now you could say that you can do that with a
 57 non-fiction text, a print-text, but its confined within the covers of an actual book where as
 58 you're going on-line and its a vast information space, so you have to have very high level
 59 sof self-regulation for example. So you have got to choose what hyperlink to follow and in
 60 a normal reaing environment you would say, to our students we would say "look at the
 61 context of the sentence and see what would make sense in that sentence" but if its a
 62 hyperlink the information is hidden below the hyperlink so you can't do that, so predictive
 63 inferencing is much more important on-line. So you are trying to traverse across this room
 64 with a billion doors and you're trying to pick up the information as you are going and so
 65 the level of prior knowledge that you need is very very different, so you are building a
 66 schema in the moment, like prior knowledge that is based on picking up, berry-picking up
 67 as Bates calls it, berry-picking information, updating your own prior knowledge and
 68 mean-while you have to know how the knowledge, how the information is presented on
 69 the website, so the informational text structures, if you are constructing a text string you
 70 have got to have prior knowledge of some kind of the domain topic. So, you're doing all
 71 this while you are reading so its very much more an active reading environment do you
 72 know? And we talk about this kind of transaction between the reader and the text and the
 73 activity, you know the RAND reading study group, but that is much more dynamic in a
 74 online environment and so you have for the first time you have got the physicality of the
 75 transaction going on between the reader and the text and in actual fact the text is almost
 76 reading the reader back. Because sometimes you go on Amazon for example and they say
 77 "welcome back" you know? "Last time you looked at..." So in a sense for the first time the
 78 text is actually reading you while you are reading the text. So, there's so many changes to
 79 reading in an on-line environment that you, its built on foundational reading skills but its
 80 much more complex I think. There is much more complexity.

1 *5h The Media Literacy Expert*

2 Media Literacy Expert

3 Yeah, its true, education is its like this idea of an oil tanker at sea, its impossible to turn
 4 around very quickly. It large, and curriculum processes are slow to change and sometimes
 5 with very good reason and they think and the idea of a curriculum and the development of
 6 educational approaches needs to think very much in long term thinking and thats the time
 7 frame in which it operates and there are of course things that schools and teachers can do
 8 and I think maybe teachers active in both curriculum development and various aspects of
 9 digital or media literacy are concerned about how to incorporate within their educational
 10 practice all of the benefits, the learning opportunities, the kinds of attributes of the
 11 information age into their thinking and that poses lots of challenges and it may be easier
 12 for some than others but certainly opportunities that we can see, there are lots of individual
 13 kinds of projects and I think what one would like to see is that institutionally and at a
 14 policy level that we embrace these kinds of objectives perhaps more directly than we have
 15 done, give it greater urgency, resource it and try and shorten the time frame between
 16 where education needs to be and in terms of where society and the wider political
 17 environment is going.

18
 19 MH

20 Yes, because that came out as well from talking to teachers that a number of teachers said
 21 change is happening but its slow. Do you think there is any advantage in things happening
 22 at a slower rate?

23
 24 Media Literacy Expert

25 It can perhaps be a bit too slow and I've just recently been looking back over the kinds of
 26 initiatives that have bee happening in the media literacy field and they are painfully slow,
 27 it must be said. Media literacy it must be said emerged forcefully onto the Irish education
 28 agenda back in the 1980s and that, in keeping with international developments at the time.
 29 You know this is when it was widely circulated and talked about and even then we were
 30 talking about media transformation, we were talking about big paradigm changes and there
 31 was certainly from the likes of UNESCO and other international organisations there was a
 32 strong push towards getting governments and education departments and ministries of
 33 education to repond to these with curriculum innovation and it happened in Ireland as it
 34 happened elsewhere in a slower pace and in a more piecemeal way. Now, the point about
 35 that is that its all of thirty years ago and we have made quite slow progress compared to
 36 many other countries. We're not unique in that, but you can clearly see large disparities
 37 and yet the media environment all of the kinds of pressures and influences have
 38 accelerated through that, so the danger is that we can be quickly left behind and there is
 39 more and more attention to that at a European level now. Just looking on the kinds of
 40 disparities between European countries.

41
 42 MH

43 Why do you think it didn't take off in Ireland the way it did in other places?

44
 45 Media Literacy Expert

46 Well I think one of the reasons is that there was a lot of education change and
 47 development over the period. There were a lot of new things happening such as the
 48 development of the new primary curriculum which developed lots of very good interesting

new concepts and new opportunities but you know it really involved change right across the whole curriculum. Also at secondary level each of the subject areas went through quite a lot of change, new structures, outsourcing from the Department of Education, the development of the NCCA. So structures have been put in place to develop new approaches to curriculum development and many of those are very sound, they are very good and Ireland has a very strong reputation in many respects, it has a very good education record but something like media literacy has failed to be at the forefront of much of that. Perhaps that is due to other kinds of influences. There has been something more of a conservative approach to it. There is perhaps what you could say the legacy of a Catholic protectionist ethos which has influenced a lot of education teaching and that tends to leave media out in the cold, its not something we want to engage with. Some of the media insitutions themselves have been slow to respond and to support media education, media literacy developments. So, there are all these kinds of obstacles in the way and yet on the other hand there are many strong reasons why we should be much more aggressive and forthright in this area, given the importance of media and cultural creativity in this country. These are arguments that have obviously supported the development of the film industry, the development of independent production, the fact that we are an English speaking country in Europe and we have wide international respect for our culture and heritage and all this feed into the potential of media literacy to be able to support and respond to that. So, that is something that perhaps I think needs greater political impetus. It had it in the 1990s it could be argued and there was a lot of more direct critical thinking around media structure, media processes and Michael D. Higgins at the time as the culture minister and so on very much promoted the concept of a cultural policy being at the forefront of a lot of our thinking. Now, sadly a lot of that was lost through the celtic tiger years and you know we have not actually gained the benefit of the opportunity of that. Thats a slight political point!

MH

So, off the point (with regard to the topic guide, not irrelevant) then, do you think with the downturn that culture will come to the fore again?

Media Literacy Expert

Well it has been identified. It has in....Smart economy identifies the potential of the creative sector generally and this includes a number of areas which include tourism and tourism building on the unique cultural heritage that Ireland possesses, so its a unique natural asset but also at the same time the reputation of Irish artists, Irish music, Irish contemporary cultural production. And its seen that the potential for a small peripheral economy in Europe, playing on a global stage is to be able to think big, think beyond our horizons in cultural terms. So, perhaps like other periods in our past, it can focus some type of cultural thinking and you know education clearly has a role to play in that . You know it influences us in higher education in terms of thinking about the media sector, about the potential for creative and cultural industries about developing the skills, about developing the kind of critical thinking. One only has to look at the UK and how they have approached this. They have developed a strong policy around the notion of promoting the concept of a Digital Britain, we need a digital Ireland strategy that has a strong dimension of cultural, media, digital literacy.

1 *5i The Communications Lecturer*

2 MH

3 And that's something that I am playing around with, I think within education primary
4 education, ICT is very technology based and it doesn't deal enough with the information
5 and the communication.

6
7 Communications Lecturer

8 I think that that is very true and I mean we would be envious of ICT literacy because they
9 seem to get lots of money whereas media literacy or general literacy should be embraced
10 with ICT so, ICT should be a means rather than an end and I think that's part of the, and I
11 think there has been a sense in primary and secondary schools that it has been about the
12 ICT expert, that if they have lots of computers then they are winning the game whereas
13 really is it about the computers or is it about how they are being used that is more
14 important than what they get? And how to, so the visual manifestation of ICT literacy is
15 the computers whereas the visual manifestation of normal literacy is just its in the kids
16 heads, that they're actually able to critically engage, so there isn't the same deliverable
17 visual, there doesn't seem to be, so I'd say that that is part of the problem and its easier to
18 get money as I say. I would see that from English literacy to numeracy to ICT literacy its
19 all a continuum, they're all pretty much interconnected and its just we put pressure, we
20 emphasise certain ones because we come from specialities, we have science and its about
21 numeracy and the lack of numeracy in Ireland and yet we know...print literacy is a big
22 problem, yet it hasn't been, its now becoming a bigger issue because of PISA and the bad
23 reports coming from Europe. Media literacy as I say is almost feared in Ireland, because in
24 the UK it was, media literacy was developed as a legitimating of working class pleasures,
25 seen as soap-operas and that kind of stuff. Lets make it good for the kids, more a left wing
26 radicals saying this should be for...In Ireland we never got on that game, we just kept it as
27 a part of the English curriculum in a very literate way but yet its what the kids really need.
28 They need to know how to interrogate the media, they need to know, politicians, how do
29 you believe them, how do you read them? How do you understand society? How do you
30 make people better citizens? My big specialism is on ecology, I'm sort of very much
31 proselytising for how to promote a green agenda within a very difficult situation where
32 economic crisis dominates, but the long term ecological agenda is much more complicated
33 and how to keep the two entrenched and how to promote those and science literacy and all
34 these sorts of literacies are very much interconnected and media studies as a way is a help
35 to that.

36
37 MH

38 One of the ideas that I'm playing around with is the idea of what it means to be literate in
39 the 21st century, to be a literate citizen, is different...

40
41 Communications Lecturer

42 Absolutely

43
44 MH

45 And it requires a more broad understanding and thought process about literacy that goes
46 beyond the book.

47
48 Communications Lecturer

49 Yeah, absolutely, the idea of not being able to...I hate texting, but not to be able to text, not
 50 to be able to use the computer, not being able to go on the web, this is the technology
 51 deficit as its called. But this is true of so many different areas in the media and as I say its
 52 changing so much. I have old fashioned VHS tapes, useless and no one uses them, but I
 53 have hundreds of them, so I have to get rid. So, technologies keep changing all the time,
 54 all driven by the economic imperative but we have to as educators try to see where we
 55 stand on them, how we use, whether we're going to skype or whatever... Now how kids
 56 are using the media and we have to be in tune with that as third level educators we have to
 57 know what the primary kids are doing otherwise they're going to come up to us in ten
 58 years time and we're not going to know what...these are weird animals, we don't know
 59 them. So, the literacy is, we...a big argument I would say is we've to learn as much as they
 60 have to learn. So we very much, I have to learn the audience, where they are, what's their
 61 answer, what's their pleasure? So, when I'm teaching film studies in five or ten years, if I
 62 don't know what the kids are into then how the hell can I teach them? So, that rejuvenation
 63 and that re-connection and cross-connection of literacy so its not a given, a pre-given we
 64 give the literacy to the new generation. They're...its a dialogue...

65
 66 MH

67 Yes, and its what has meaning for them... I did focus groups with children about their
 68 media culture and got them to talk and similar to the findings of that EU Kids Online
 69 Study, I found they were really confident, felt extremely autonomous and said they knew
 70 how to use technology and stuff but I found some of them couldn't do as much as they
 71 thought they could do necessarily and they had very few critical skills. When I asked what
 72 the possible dangers were they were coming out with things like square eyes....The other
 73 thing for the children is that there isn't a new media old media divide for them..

74
 75 Communications Lecturer
 76 Everything is digital now...

77
 78 MH

79 Yeah so this is very much their world but what I would say as a teacher is I did a Masters
 80 in Media Studies so I would think that I have a good understanding, critical understanding
 81 of literacy and media but most teachers don't so in a way its unrealistic to ask them to
 82 teach this because we didn't get it in secondary school I don't think and if you didn't do it
 83 in college, and it is a skill, it is something you need to learn.

84
 85 Communications Lecturer

86 Absolutely, I mean I wrote a book in the UK called Continuum and it was a guide to
 87 communication and it was designed for teacher training, for students who were doing two
 88 subjects which they might want to add media as one of their subjects. Now in the UK, you
 89 can do two or three subjects a bit like Ireland, so I think we maybe need to proselytise
 90 more and find more ways of getting into the teacher training and I mean I have had words
 91 with [lecturer in St. Pats] about this, so I would argue Pats do bugger all media literacy
 92 and I have said that to [lecturer] and [lecturer] and they sort of...they'll do their philosophy
 93 and whatever and fine I'm very into philosophy but I think that media literacy feeds into,
 94 so I think that there is an area that is very underprovided for teachers in their curriculum.
 95 And they are talking about going to a four year programme and that's what's on the cards
 96 at the moment and I would hope that they might consider, that we might get some more
 97 work out of them or whatever but I think that that's and as you say if the teachers don't
 98 have it how the hell can the students have it?

Appendix 6 - Focus Group Transcripts

6a Junior Mixed – Television and DVDS

- MH Do people talk about television in school?
- JG 118 Sometimes...
- MH Like what?
- JG 279 -----in our class likes “Glee”.
- MH What do they say?
- JB 286 Mostly me and my friends always talk about funny stuff like, like he tells me what happened in Family Guy, when he’s seen it.
- MH Very good. Yes?
- JB 778 The boys talk about football.
- MH The boys talk about football. Yes?
- JG 118 Usually, em girls talk about em Bratz and all, they see it on TV or music and all and the boys usually talk about Family Guy, football, or football players who won.
- MH Very good. Yes?
- JG 121 Boys usually talk about “Match Attacks”.
- MH Good. Do boys and girls like different things on television?
- (enthusiastic response in the affirmative)
- MH Why?
- JG 121 Because only my brother like football, my dad doesn’t, he likes history.
- MH Yes?
- JG 118 Boys like “boy’s stuff” cos they think its like fascinating like football or family guy or comedies and realistic stuff and girls like girlie stuff like TV shows and...
- MH What do you think of the boy’s things that they like?
- JG 118 Horrible. Boring

- MH OK. What do you think of girls things?
- JB 286 Stupid, annoying eh make-up should be banned cos its... its stupid, weird. The things that girls watch are stupid, mostly cos when I had to sleep [in the same room as twin sister] she mostly watches America's Next Top Model...
- (others are laughing and he plays up to it a bit)
- JG 118 I love that show.
- JB 286 I probably fall asleep then when she, then in the morning I probably go down to my room and watch TV.
- MH OK. JG 121?
- JG 121 I think football is for people who are lazy and just sit down, especially boys.
- MH OK. JB 137?
- JB 137 Things that girls watch are very, very, very stupid and make-up should be banned from TV's forever.
- JB 286 (arms in the air and cheers, "yeah"!)
- JB 778 They only watch gossip stuff.
- MH Gossip stuff, do you like gossip?
- JB 778 No.
- MH What do you think of it?
- JB 778 Boring.
- MH Boring. JG 279?
- JG 279 All boys like is football and other things but girls, some girls hate football.
- MH Very good, JG 118?
- JG 118 Usually when I watch America's Next Top Model [twin brother] usually starts whinging.

6b Senior Boys – Critical Perspectives on Media

- MH Very good, so we have got through our six major areas of media. Now I just want to ask you some general questions about the media. The first question I want to ask you is why do you think we have media?
- SB 285 To know about stuff.
- SB 963 To know like all around the world, what going on around the world. Like if we never had media, we wouldn't know that much about what happens.
- MH Excellent
- SB 236 History.
- MH Could you say some more about that?
- SB 236 Like World War 1 and World War 2, who started it, what happened and like who ended the war.
- SB 285 To entertain ourselves when we are bored.
- MH Very good.
- SB 285 By playing games and all that.
- MH Can you think of any reason that we have media?
- SB 379 To talk to people?
- MH Absolutely. Let's just think, its kind of the same question the other way round, what would the world be like if we didn't have any of these?
- SB 963 Because you would be bored...and you wouldn't be that smart.
- SB 236 You would be dumb and stupid. No one could tease us cos they wouldn't know as well.

6c Senior Girls – Critical Perspectives on Media

- MH Is there any bad side?
- SG 722 To the Internet?
- MH To any of those media?
- SG 454 Well on the Internet, say if you are on facebook or something, like my mam won't let my little sister be on it yet, because she's too young and she thinks that like she might like...you know when they pretend to be like a kid and put a false picture up and then like say "Do you wanna meet at Spar?" and like then she could go to Spar and they could take her.
- MH What about television?
- SG 252 Yeah, it can be bad for your eyes if you watch too much.
- SG 127 If you watch it too much, you'll get addicted to TV!
- SG 454 And when you watch it and then you turn, your eyes like when you close them they kind of water.
- MH Do you think it's healthy to spend a lot of time inside watching television and playing games?
- SG 127 You need to go out for air and like have fun, instead of just watching...
- SG 252 And keep active
- SG 454 Get your energy.
- SG 127 Like go to the community centre and join stuff...like dancing.
- MH Yeah, what effect do you think it would have on someone if they watched loads of television and played loads of games?
- SG 454 They'd be just lazy.
- SG 127 They'd be blind.
- MH Do you think that understanding computers is important for you in the future?
- All Yeah (but slow to explain why...)
- SG 127 For work or...
- SG 989 Secondary school, in secondary school you have to

SG 127

In secondary school to find out stuff or if you are stuck on anything...

Appendix 7 – ICT Framework Learning Outcomes

ICT Framework: Revised Framework

Learning Opportunities for Level 1

Level 1, Area C

Creating, communicating and collaborating

	The student should be enabled to
C1	<p>draft, format and revise text using ICT</p> <p><i>Students demonstrate learning at level 1 when they</i></p> <ul style="list-style-type: none"> record simple information such as their own name and simple sentences using an age appropriate word processor, writing programme or presentation software. explore text editing techniques such as cut, copy, paste.
C2	<p>create, manipulate and insert information in a variety of different formats using ICT</p> <p><i>Students demonstrate learning at level 1 when they</i></p> <ul style="list-style-type: none"> experiment with creative uses of paint and draw tools (e.g. creating simple images using line, shape, pattern and colour). modify existing designs using drawing or painting software. select suitable pictures from image collections, clip art or digital camera to illustrate a story or topic and inserting them in a document or presentation. experiment with recording sound and audio using ICT multimedia tools with teacher or peer support (e.g. MP3 or computer audio files).
C3	<p>gather, organise, manipulate and analyse data using ICT</p> <p><i>Students demonstrate learning at level 1 when they</i></p> <ul style="list-style-type: none"> organise images, words or letters in a set, a pattern or sequence with teacher or peer support. save information in a file and save files in a specified personal or class folder.
C4	<p>communicate and collaborate locally and globally using ICT</p> <p><i>Students demonstrate learning at level 1 when they</i></p> <ul style="list-style-type: none"> discuss with children in the class and the teacher how ICT is used to communicate with others locally and globally (e.g. text, image, photos, video, newsletters, email, web applications). compose, send, and respond to email with assistance from the teacher. work with the teacher, and children in other classes/schools on collaborative communication, online or exchange projects. collaborate with children in the class and/or other classes within the school to create and share writing, images or projects electronically (e.g. via a class web page, sending an email attachment or other collaborative space).
C5	<p>plan, design, create and present information using ICT</p> <p><i>Students demonstrate learning at level 1 when they</i></p> <ul style="list-style-type: none"> create or retell a story in multimedia with teacher support (e.g. images, text and multimedia). present information using audio.

Level 1, Area F**Developing foundational knowledge, skills and concepts**

	The student should be enabled to
F1	<p>demonstrate and apply functional knowledge and understanding of ICT</p> <p><i>Students demonstrate learning at level 1 when they</i></p> <ul style="list-style-type: none"> perform basic computer and other ICT operations such as turning on computer, printer or digital camera, inserting a disk in computer, running or playing it, ejecting a disk, shutting down, and taking a picture using the digital camera. use some basic ICT terminology correctly (e.g. monitor, mouse, printer and screen). name and recognise the purpose of basic input devices and output devices (e.g. key board, mouse, touch pad, monitor, screen and printer). use a concept keyboard, mouse or joystick to move the cursor on the screen and use some basic key board conventions (e.g. enter, space bar and backspace). open, navigate and close age appropriate software (e.g. interactive books, educational software, creative and multimedia presentation software). recognise and appropriately use some symbols and icons in common software (e.g. open, close, print, save, forward, back, undo, hyperlink and shut down). find letters and numbers for their writing on the key board, and use special keys (e.g. space bar, shift key, delete, backspace, return and arrow keys). use commands, menus and icons to save and print their work (e.g. CTRL_S, save icon, and print icon). use a printer with teacher assistance. play, listen to and view common audio and video media with teacher support.
F2	<p>develop skills for maintaining and optimising ICT</p> <p><i>Students demonstrate learning at level 1 when they</i></p> <ul style="list-style-type: none"> take basic care of the computer, keyboard and monitor and understand how to care properly for software. develop responsibility for managing own files and folders (e.g. know how to name a file or folder and find own named files or folders).
F3	<p>understand and practice healthy and safe uses of ICT</p> <p><i>Students demonstrate learning at level 1 when they</i></p> <ul style="list-style-type: none"> adopt optimum sitting, hand, arm and fingering positions when using the computer. develop safe habits when using the digital camera and other handheld equipment (e.g. putting strap around neck, using correct grip, etc.). understand class and school procedures and appropriate and inappropriate behaviour when using ICT (e.g. safety when searching and following school rules and guidelines for using ICT resources).

Level 1, Area T
Thinking critically and creatively

	The student should be enabled to
T1	<p>research, access and retrieve information using ICT</p> <p><i>Students demonstrate learning at level 1 when they</i></p> <ul style="list-style-type: none"> • <i>discuss with the teacher and children in the class the suitability of different resources for an information search (e.g. an encyclopaedia, a book, a CD, a web site or an image bank).</i> • <i>realise that information may be found in formats other than text (e.g. image, photo, video, sound, and newsletter).</i> • <i>recognise the web browser interface, know what hyperlinks look like and know that they can be clicked to get more information.</i> • <i>discuss suitable key words for a topic information search on the Internet or on CD Rom with children in the class and the teacher.</i> • <i>conduct simple searches with teacher support (e.g. a simple word search, image search or learning quest).</i> • <i>look for relevant information for a topic independently on teacher pre-selected electronic resources (e.g. CD Rom, image bank, web page).</i>
T2	<p>evaluate, organise, and synthesise information using ICT</p> <p><i>Students demonstrate learning at level 1 when they</i></p> <ul style="list-style-type: none"> • <i>organise information, images or text according to given criteria such as same, different, size, shape etc.</i> • <i>discuss with the teacher and peers the usefulness of the results of information searches.</i> • <i>begin to distinguish fact from story on teacher selected websites.</i> • <i>make sense of information from screen based texts and images.</i>
T3	<p>express creativity and construct new knowledge and artefacts using ICT</p> <p><i>Students demonstrate learning at level 1 when they</i></p> <ul style="list-style-type: none"> • <i>create new designs and explore and modify images, shapes, drawings, colours and text.</i> • <i>express themselves creatively using language, text, image or sounds (e.g. recording sounds or music, recording images for use in projects or stories, or creating shapes).</i>
T4	<p>explore and develop problem-solving strategies using ICT</p> <p><i>Students demonstrate learning at level 1 when they</i></p> <ul style="list-style-type: none"> • <i>develop subject specific learning skills such as matching, comparing, finding difference, counting, sorting size, shape or colour, measuring, logic, prediction, and putting into order by exploring age appropriate software.</i> • <i>describe or recount the stages or steps they went through in completing an activity with ICT.</i> • <i>use problem solving strategies to solve simple ICT quests and problems with teacher and or peer support (e.g. in a webquest or with simulation software).</i>

Level 1, Area S**Understanding the social and personal impact of ICT**

	The student should be enabled to
S1	<p>demonstrate understanding and critical awareness of the contribution of ICT to the individual and to our society</p> <p><i>Students demonstrate learning at level 1 when they</i></p> <ul style="list-style-type: none"> • recognise and name some everyday devices which use ICT (e.g. mobile phones, digital cameras, video cameras, DVD players, and GPS in cars, etc.) • identify and discuss some of the ways that ICT is used in the home, in the school, and in the everyday life in the community (e.g. communicating, searching, learning, form filling, online banking, booking tickets, photo editing, libraries and shopping, etc.)
S2	<p>develop independent and collaborative learning and language skills using ICT</p> <p><i>Students demonstrate learning at level 1 when they</i></p> <ul style="list-style-type: none"> • develop an understanding of, and confidence in, themselves as learners (e.g. through recording and retelling ideas and personal stories using ICT resources). • develop collaborative learning skills using ICT working in pairs or in groups.
S3	<p>demonstrate an awareness of, and comply with, responsible and ethical use of ICT</p> <p><i>Students demonstrate learning at level 1 when they</i></p> <ul style="list-style-type: none"> • respect the rights and feelings of others in their use of ICT. • recognise the need to follow guidelines for responsible ICT use and care in the school. • recognise situations where they should ask for help when there are problems with ICT. • develop a concept of ownership of personal work (e.g. understanding why they should not copy or change work created by others). • realise that Internet sites and CD programmes have a creator or author. • begin to recognise the need for security when using ICT (e.g. recognising what a password is and how it is used). • realise that there can be harmful personal consequences to the irresponsible use of ICT.